ENVIRONMENT & CLIMATE REGULATION 2023

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Getting the Deal Through

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Lexology Getting the Deal Through is delighted to publish the eighth edition of *Environment & Climate Regulation*, which is available in print and online at www.lexology.com/gtdt.

Lexology Getting the Deal Through provides international expert analysis in key areas of law, practice and regulation for corporate counsel, cross-border legal practitioners, and company directors and officers.

Throughout this edition, and following the unique Lexology Getting the Deal Through format, the same key questions are answered by leading practitioners in each of the jurisdictions featured. Lexology Getting the Deal Through titles are published annually in print. Please ensure you are referring to the latest edition or to the online version at www.lexology.com/gtdt.

Every effort has been made to cover all matters of concern to readers. However, specific legal advice should always be sought from experienced local advisers.

Lexology Getting the Deal Through gratefully acknowledges the efforts of all the contributors to this volume, who were chosen for their recognised expertise. We also extend special thanks to the contributing editors, James M Auslander and Brook J Detterman of Beveridge & Diamond PC, for their continued assistance with this volume.

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Introduction

Brook J Detterman, Aron H Schnur and Eric L Christensen

Beveridge & Diamond PC

It is an especially eventful time for environmental law, on an international scale, and we anticipate substantially more activity on the horizon. The global community continues to grapple with widespread issues such as climate change and adaptation, sustainability and supply chains, waste and circular economy considerations, infrastructure development, oceans and species protection, management of plastics and chemicals such as Per- and polyfluoroalkyl substances (PFAS), and environmental justice. Corporate, investor, and NGO and stakeholder attention to ESG – environmental, social, and governance – issues continues to rise.

At the same time, individual countries are witnessing changes to their domestic regulatory regimes and significant court decisions. For example, the United States in recent years, based on narrow election results, has seen divergent shifts in regulatory and deregulatory approaches. Significant regulatory activity and litigation continue to shape key areas, such as PFAS regulation, waste, energy development and climate change disclosures. New US legislation is also starting to make its mark, with new laws aimed at reducing and sequestering greenhouse gas emissions poised to make a significant impact.

Beveridge & Diamond is pleased to lead the preparation of the Lexology Getting The Deal Through: Environment & Climate Regulation chapters at this exciting time. As the largest dedicated environmental law firm in the United States, Beveridge & Diamond is a US and global leader on all the issues discussed in these chapters. Beveridge & Diamond is also honoured by the opportunity to work with the esteemed contributing firms outside the United States, and appreciates their authored additions to this valuable resource.

We hope you find this publication helpful, and we invite you to reach out to the contributing editors or any of the authors for additional insights.

Australia

William Oxby and Jessica Day
Johnson Winter & Slattery

LEGISLATION

Main environmental regulations

1 | What are the main statutes and regulations relating to the environment?

Australia is a federation of six states with two mainland territories. They are, in no particular order, New South Wales (NSW), Victoria, Queensland, South Australia, Western Australia, Tasmania, the Australian Capital Territory and the Northern Territory.

The Australian Constitution establishes Australia's federation and divides the power to make laws between the Commonwealth and the states. Each level has a role in environmental regulation. This means that for a single project or development, a proponent may have to seek approvals from all three levels of government: the Commonwealth government department, the state authority and the relevant local government.

The Constitution does not contain an express power permitting the Commonwealth Parliament to make laws with respect to environment protection. Under the division of power, it is the states that have the primary responsibility for making these laws. Under section 109 of the Constitution, if any inconsistency arises between a law of the Commonwealth and a law of a state, the law of the Commonwealth prevails, and the state law is invalid to the extent of the inconsistency.

The Commonwealth's power to make laws with respect to the environment is derived from the Commonwealth's external affairs power under the Australian Constitution and is restricted to matters of national significance. This restriction is reflected in the structure and ambit of the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (the EPBC Act), the primary environment protection legislation. The Minister for the Environment has no express power to intervene in decisions of state or local governments, nor is it possible to 'appeal' state or local government decisions to that Minister.

Each of the states and territories has its own environment protection laws, administered by different government departments. With very limited exceptions, the jurisdiction of a state ends at the state border.

Some laws are commonly classed as environment laws and others as planning laws, but the distinction is often arbitrary. In practice, planning laws in Australia also consider impacts on the environment. For this reason, environment and planning typically travel together as legal practice areas.

Many statutes not primarily concerned with environment protection nonetheless contain provisions associated with the issue. This is particularly true of those statutes that facilitate or regulate land use and development. An example of such a statute is each state's mining and petroleum legislation.

Australia can be characterised as a regulated environment where the trend is towards increasing regulation.

The main statutes relating to the environment in Australia are set out in the following table.

Jurisdiction	Principal environment protection legislation
Cth	Environment Protection and Biodiversity Conservation Act 1999 (Cth)
NSW	Protection of the Environment Operations Act 1997 (NSW)
Vic	Environment Protection Act 2017 (Vic)
Qld	Environmental Protection Act 1994 (Qld)
SA	Environmental Protection Act 1993 (SA)
WA	Environmental Protection Act 1986 (WA)
Tas	Environmental Management and Pollution Control Act 1994 (Tas)
NT	Environment Protection Act 2019 (NT)
ACT	Environment Protection Act 1997 (ACT)

There is no national bill or charter of human rights. Two of the six states and one of the territories have enacted human rights legislation, as set out in the following table.

Jurisdiction	Human rights legislation
ACT	Human Rights Act 2004 (ACT)
Vic	Charter of Human Rights and Responsibilities Act 2006 (Vic)
Qld	Human Rights Act 2019 (Qld)

The interface between human rights legislation and environmental legislation has yet to develop.

The most recent example of the interaction can be found in the decision of the Land Court of Queensland, where the court held that it had jurisdiction to consider human rights issues under the Human Rights Act 2019 (Qld) in making recommendations regarding objections referred to the court under the Environment Protection Act 1994 (Qld) (see *Waratah Coal Pty Ltd v Youth Verdict Ltd & Ors* [2020] QLC 33).

Integrated pollution prevention and control

2 | Is there a system of integrated control of pollution?

Each state and territory has an integrated system that regulates and controls pollution as a form of environmental impact, often at both state and local government levels. In general, pollution is not regulated directly at a Commonwealth level, but is regulated indirectly through national coordination on particular matters. For example, the setting of national guidelines and standards is a matter coordinated nationally, as is the regulation of pollution that affects matters of national environmental significance.

Soil pollution

3 | What are the main characteristics of the rules applicable to soil pollution?

Each state and territory has a system that regulates and controls soil pollution. These systems often operate at both state and local government levels.

Laws regulating soil pollution exist in generally two forms: provisions within general environment protection statutes and statutes specifically regulating soil pollution.

First, the principal environment protection statutes at all levels often include an offence of 'land pollution' or similar.

Secondly, the states and territories can also have specific land contamination statutes. For example, in NSW there is the Contaminated Land Management Act 1997 (NSW). The objective of that statute is to establish a process for investigating and, where appropriate, remediating contaminated land.

In Victoria, the Environment Protection Amendment Act 2018 (Vic) recently amended the Environment Protection Act 2017 (Vic) introducing a new general environmental duty as well as a mandatory duty to report contamination above certain prescribed levels and significantly increased penalties. The changes came into effect on 1 July 2021.

In general, soil pollution is not regulated directly at a Commonwealth level but is regulated indirectly through national coordination on particular matters. For example, the setting of national guidelines and standards is a matter coordinated nationally, as is the regulation of pollution that affects matters of national environmental significance.

The PFAS National Environmental Management Plan 2.0 is an example of the coordination between the Commonwealth and the states and territories, in respect of which regulators in each state and territory agreed uniform standards for the management of PFAS contamination.

Regulation of waste

4 | What types of waste are regulated and how?

Each state and territory has a system that regulates waste. These systems often operate at both state and local government levels. In general, waste is not regulated directly by legislation at a Commonwealth level but is regulated indirectly through national coordination. See, for example, the National Waste Policy 2018 (the National Waste Policy) and the National Waste Policy Action Plan 2019, which presents targets and actions to implement the National Waste Policy. The Recycling and Waste Reduction Act 2020 (Cth), which commenced on 16 December 2020, deals with waste export bans and strengthens product stewardship.

The regulation of waste is increasingly linked to what is referred to as 'waste avoidance' and 'resource recovery', which includes recycling. This means that waste is regulated both under the environment protection statutes and by specific resource recovery legislation. Examples of specific waste avoidance and resource recovery legislation include:

- the Waste Avoidance and Resource Recovery Act 2001 (NSW);
- the Waste Management and Pollution Control Act 1998 (NT);
- the Waste Reduction and Recycling Act 2011(Qld);
- the Waste Avoidance and Resource Recovery Act 2007 (WA);
- the Waste Management and Resource Recovery Act 2016 (ACT);
- the Circular Economy (Waste Reduction and Recycling) Act 2021 (Vic); and
- the Single-use and Other Plastic Product (Waste Avoidance) Act 2020 (SA).

Regulation of air emissions

5 | What are the main features of the rules governing air emissions?

All Australian states and territories have environment protection legislation that regulates air pollution. This occurs in the principal environment protection statutes.

The various state statutes require that licences, approvals or permits are obtained for certain prescribed or scheduled activities. In most jurisdictions, integrated licences replace the requirement to apply for separate licences relating to air, water and land pollution under varying procedures outlined in the relevant statutes.

The activities, thresholds and trigger values that are prescribed or scheduled for licensing purposes vary in each jurisdiction. But, in general, the prescribed or scheduled activities include any activity that has the potential to cause air pollution. Examples of such activities are chemical processing and waste treatment.

Greenhouse gas emissions are not regulated, but are subject to a national, incentive-based scheme. The scheme encourages farmers and foresters to carry out projects for carbon storage on their land. Under Commonwealth law, corporations that emit greenhouse gases beyond specified thresholds are required to report their levels of emissions (see National Greenhouse and Energy Reporting Act 2007 (Cth)).

Emissions from motor vehicles are regulated by specific provisions in the environment protection statutes and by particular regulations aimed at motor vehicle emissions (see, eg, Environmental Protection Act 1994 Qld Chapter 8 Parts 3E, 3F; Transport Operations (Road Use Management – Vehicle Standards and Safety) Regulation 2021 (Qld) Schedule 1 Part 9). In October 2020, the Commonwealth Department of Infrastructure, Transport, Regional Development and Communications released two draft Regulation Impact Statements for public consultation considering the case for mandating more stringent noxious emission standards in Australia, including Euro 6, for new light vehicles and Euro VI, for new heavy vehicles.

Each state or territory also sets its own standards for air emissions. Commonly regulated emissions include carbon monoxide, nitrogen dioxide, photochemical oxidants, sulphur dioxide and lead.

Protection of fresh water and seawater

6 | How are fresh water and seawater, and their associated land, protected?

Water is managed at both national and state or territory levels. As with environmental laws generally, the majority of regulation occurs at the state and territory level. However, some regulation of water exists at a national level, in recognition of the fact that Australia is the driest inhabited continent in the world, and that water is therefore a scarce and precious national resource.

At a national level, water is regulated through the Department of Climate Change, Energy, the Environment and Water. This type of regulation means that matters of national environmental significance can be managed through the Environment Protection and Biodiversity Conservation Act 1999 (Cth). Relevantly, water resources in relation to coal seam gas and large coal mining development are protected as a matter of national environmental significance (known as the 'water trigger'). In addition, the Water Act 2007 (Cth) (the Water Act) permits the acquisition and management of water by the Australian government for environmental benefit. The Water Act also established the Murray–Darling Basin Authority to manage the Murray–Darling Basin, which is the largest river system in Australia and covers parts of Queensland, NSW, Victoria, the Australian Capital Territory and South Australia.

The state and territory environment protection statutes manage water pollution. In addition, the states and territories have specific

water management legislation. For example, NSW has the Water Act 1912 (NSW) and the Water Management Act 2000 (NSW), Queensland has the Water Act 2000 (Qld) and Victoria has the Water Act 1989 (Vic).

State legislation manages water in several ways. The legislation typically creates water entitlements based on the availability of water in a catchment. Water entitlements can often be traded. A water entitlement can be separate from the approval to use particular infrastructure to extract or capture the water. For example, you might have an approval to operate a bore, as opposed to an approval to build a dam. In addition, the use to which the water may be put is also regulated. This is to ensure that water, which is a scarce resource, is allocated appropriately. Aside from the capture and use of water, approvals can also be required for inhibiting or altering the natural flow and direction of water.

Protection of natural spaces and landscapes

7 | What are the main features of the rules protecting natural spaces and landscapes?

Natural spaces and landscapes are protected in a variety of ways at the levels of Commonwealth, state and territory, and local government. No single piece of legislation regulates and protects an entire landscape. Instead, each landscape has layers of regulation that protect both the landscape as a whole and its constituent parts.

The most common way of protecting natural landscapes is the declaration of national parks and marine parks. National parks can be declared at both state and Commonwealth levels, and each level has specific legislation for that purpose (see, eg, National Parks and Wildlife Act 1974 (NSW); Nature Conservation Act 1992 (Qld); Marine Parks Act 2004 (Qld)). At the Commonwealth level, a marine park, such as the Great Barrier Reef Marine Park, can be protected as a matter of national environmental significance under the Environment Protection and Biodiversity Conservation Act 1999 (Cth).

Particular elements of the landscape can also be protected under state and Commonwealth legislation. For example, flora, fauna, and indigenous and non-indigenous heritage within the national park can receive particular protection.

The declaration of a natural landscape as a national park also provides indirect protection. For example, only very limited forms of development are permitted in a national park.

Protection of flora and fauna species

8 | What are the main features of the rules protecting flora and fauna species?

In Australia, both flora and fauna are protected at state and territory, and Commonwealth levels. For example, in NSW, flora and fauna are protected by the Biodiversity Conservation Act 2016 (NSW) (see also the Nature Conservation Act 1992 (Qld)).

At a Commonwealth level, flora and fauna that are matters of national environmental significance are protected under the Environment Protection and Biodiversity Conservation Act 1999 (Cth).

Noise, odours and vibrations

9 | What are the main features of the rules governing noise, odours and vibrations?

State and territory environmental legislation regulates noise according to its location, nature, volume, duration and time of day. In all state and territories, environment protection legislation provides for the making of policies about noise. For example, in Victoria, state environment protection policies have been created under the Environment Protection Act 2017 (Vic) to regulate noise pollution. In all states and territories, noise can also be controlled when conditions relating to noise are applied to environmental permits, licences or approvals.

Odours fall within the category of environmental nuisances (see, eg, Environmental Protection Act 1994 (Qld) section 15(a)). As such, odours come within the scope of the general provisions that address causing environmental harm. In addition, town planning decisions about the uses of land normally consider odour emissions.

In most jurisdictions, 'noise' includes vibration (see, eg, Environmental Protection Act 1994 (Qld) section 12). The only exception is the Australian Capital Territory legislation, which makes no direct reference to vibrations in the context of environment protection. In the Northern Territory, 'noise' is defined as a vibration of a frequency in the range of 0 to 20,000 hertz (see Waste Management and Pollution Control Act 1998 (NT) section 4(1)).

Liability for damage to the environment

10 | Is there a general regime on liability for environmental damage?

At a Commonwealth level, the Department of Climate Change, Energy, the Environment and Water can take actions that enforce the environmental requirements contained in the Environment Protection and Biodiversity Conservation Act 1999 (Cth), including determinations that address environmental damage.

Each state and territory has a system that regulates and controls environmental impact. Within that framework there is no specific liability regime for environmental damage. The environment is protected against environmental damage through a legislative system that prohibits activities that may damage the environment unless they occur in accordance with the prescribed approval. Where the prescribed approval is not held there are various sanctions including civil and criminal penalties. These operate to both remediate the impact and deter further unlawful activities.

Environmental taxes

11 | Is there any type of environmental tax?

Australia has a federated taxation system. Environmental taxes can be imposed in limited forms at a Commonwealth level and more generally at a state level. Most, if not all, Australian laws that require an approval or permit before an activity can be undertaken will as a general rule require an application fee as well as potentially a levy. The fee or levy can be fixed or relative to impact – for example, load-based fees for air pollution or waste disposal. Environmental taxes also exist in the form of energy taxes and transportation taxes. An example of energy taxes is the Commonwealth's excise on crude oil, liquefied petroleum gas, and gas and petroleum products (see Excise Tariff Act 1921 (Cth)). An example of a transportation tax is the stamp duty imposed by states and territories on motor vehicles, which usually comprises a fixed-fee component and a component that increases with vehicle size (see, eg, Duties Act 2000 (Vic) section 214).

In 2011, Australia introduced a carbon-pricing mechanism, which has since been repealed. The Clean Energy Act 2011 (Cth) (no longer in force) was intended to control carbon dioxide emissions through a carbon-pricing mechanism. The Act was eventually repealed and ceased to have effect from 1 July 2014.

Environmental reporting

12 | Are there any notable environmental reporting requirements (eg, regarding emissions, energy consumption or related environmental, social and governance (ESG) reporting obligations)?

Each state and territory has a system that regulates environmentally hazardous activities either directly or indirectly. The regulation extends to the activity as well as its component parts. This can occur at both state and national levels. For example, mining is a heavily regulated activity and both state and national approvals are typically required, including for the relevant mining lease, which permits the activity as whole. Approvals may also be required for various activities within the mine, such as the transport of process chemicals, storage of hazardous materials, power generation and blasting.

Government policy

13 | How would you describe the general government policy for environmental issues? How are environmental policy objectives influencing the legislative agenda?

The overall trajectory of environmental management and protection in Australia at Commonwealth and state level is towards greater protection as well as specific or direct management of particular issues. In the last decade environmental policy has influenced the legislative agenda, particularly at the confluence of competing uses of agricultural land, energy and population growth. This is predicted to continue throughout 2022 and 2023 in the area of energy, particularly where further reform is required to accommodate renewable energy, new technology and complementary and new industries such as hydrogen.

The Offshore Electricity Infrastructure Act 2021 (Cth) which commenced on 2 June 2022, enables the development of offshore renewable energy infrastructure, and highlights the legislative trajectory (at the Commonwealth level) towards greater environmental protection.

HAZARDOUS ACTIVITIES AND SUBSTANCES

Regulation of hazardous activities

14 | Are there specific rules governing hazardous activities?

Hazardous activities are strictly regulated in Australia. This occurs at all levels of the local, state and Commonwealth environment and planning system. Hazardous activities (other than some resource activities) are managed through the planning system insofar as where they can be located and approved from a land use perspective. As a consented land use, hazardous activities are typically then managed at an environmental impact level through an activity-based licence. In Queensland, the Environmental Protection Act 1994 (Qld) manages 'environmentally relevant activities' and in New South Wales , the Protection of the Environment Operations Act 1997 (NSW) requires the licencing of 'scheduled activities'.

Regulation of hazardous products and substances

15 | What are the main features of the rules governing hazardous products and substances?

Dangerous goods (explosive, flammable, toxic, infectious, corrosive properties) are predominantly regulated at a state or territory level to national standards that are in part or whole adopted by the relevant state or territory, for example, the Australian Code for the Transport of Dangerous Goods by Road and Rail.

At a Commonwealth level, a permit is required for the export, import or transit of hazardous waste as defined in the Hazardous Waste (Regulation of Exports and Imports) Act 1989 (Cth) (the Hazardous Waste Act). The definition of hazardous waste encompasses industrial waste that is explosive, flammable, poisonous, corrosive or toxic, among other things. It also includes household waste and residues arising from the incineration of household waste. The Hazardous Waste Act gives effect to the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal.

The Department of Climate Change, Energy, the Environment and Water is responsible for issuing permits for hazardous waste, and the type of permit required will depend on the country of destination (for exports) or the country of origin (for imports).

Industrial accidents

16 | What are the regulatory requirements regarding the prevention of industrial accidents?

Safety is managed at both Commonwealth and state levels. Each of the states has comprehensive occupational health and safety (OH&S) laws that are separate and distinct from environment protection laws. These OH&S laws can apply equally to an industrial accident where both safety and environmental impact are of concern. Safe Work Australia is a statutory body jointly funded by the Commonwealth and states that develops national policy for OH&S and workers' compensation.

Prevention of industrial accidents more generally is achieved through Australia's rigorous regulatory requirements for approving industrial activities. Approval for industrial activities extends to the design and impact of the activity with regulators mandating minimum design requirements and standards that must be achieved to be considered for approval. For example, major projects that have obtained environmental approvals will be subject to extensive conditions mandating further design and engineering approval as well as construction and operational management plans that relate to matters that include noise, dust, blasting, sediment control, water management, design standards and safety. Non-compliance with conditions of approvals is, in most cases, an offence as well as enabling the regulatory ability to issue stop-work and restitution-type orders.

ENVIRONMENTAL ASPECTS IN TRANSACTIONS AND PUBLIC PROCUREMENT

Environmental aspects in M&A transactions

17 | What are the main environmental aspects to consider in M&A transactions?

In the context of Australian M&A transactions, environmental aspects are managed together with planning matters. They are referred to collectively as environment and planning (E&P).

There are broadly four E&P issues to be considered in an M&A transaction:

- Are the requisite E&P approvals in place? Where the asset is in operation, this question becomes, 'Are the approvals in place that permit the operation of the asset?' Where the asset is yet to be constructed, the question becomes, 'Are the approvals necessary to commence construction in place?' Where approvals are not held, the activity may be unlawful and subject to penalties, including stop-work orders and remediation. These considerations are relevant in the context of both share acquisitions and assets sales.
- Is there compliance with conditions in any approvals held? If conditions are not being complied with, the activity may be unlawful and subject to penalties, including stop-work orders and remediation. A history of non-compliance can impact the ability to procure future approvals. The issue of compliance with conditions can be more

critical for share sales as opposed to asset sales where the corporate history is not acquired.
- Social licence: in making decisions about licences to operate, decision makers are increasingly considering the company or asset's past E&P performance. This factor is important for both share sales and asset sales, because assets often inherit the social licence of the former owner.
- Regulatory requirements: the relevant E&P approvals might not be automatically transferable. Generally, planning approvals run with the land, but environmental approvals often do not. The transfer of certain approvals might require consent from a regulatory authority. In certain cases, a fresh approval might need to be acquired.

Each issue can be managed in a transaction through the pricing, structure of the transaction, warranties and guarantees that underpin the transaction.

Environmental aspects in other transactions

18 | What are the main environmental aspects to consider in other transactions?

Other transactions, such as financing and initial public offerings, are not unlike M&A transactions in Australia. While the same questions arise, the emphasis can be slightly different. For example, a financing transaction might require security over the assets, and accordingly, the nature of the regulatory investigation will focus on what security may be possible.

Environmental aspects in public procurement

19 | Is environmental protection taken into consideration by public procurement regulations?

The public procurement process has many elements. One element is the question of whether the procuring entity is a government or state-owned corporation, or indeed whether the government has an interest in the relevant asset or business. The extent of government ownership can of itself affect the nature of the procurement process.

As a general rule, all public procurement carries with it a merits element that may either expressly or implicitly import a company's history of compliance and performance. In addition, environmental compliance can be swept up in broader procurement commitments (eg, to comply with the law).

ENVIRONMENTAL ASSESSMENT

Activities subject to environmental assessment

20 | Which types of activities are subject to environmental assessment?

In most states, it is either the relevant minister, department or regulatory authority or the operative statute that determines whether an environmental impact assessment (EIA) is required for a particular project. The kinds of activities that require EIAs differ between the various states and territories, but as a general rule the higher the potential for impact to the environment, the greater the level of assessment that will be required.

Under the Environment Protection and Biodiversity Conservation Act 1999 (Cth), projects require approval if they have the potential to have a significant impact on a matter of 'national environmental significance' (such as world heritage properties and migratory species).

Environmental assessment process

21 | What are the main steps of the environmental assessment process?

EIAs are one mechanism that regulators use to identify and evaluate the potential environmental impacts of proposed activities. The EIA process varies between the states and territories.

The process for securing an approval under the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (the EPBC Act) requires the proponent to refer their project to the Department of Climate Change, Energy, the Environment and Water for assessment. The EPBC Act provides for five different levels of assessment. Which level of assessment a project will be subjected to depends on the significance of the project and how much information is already available.

The process of environmental assessment also varies between the various states and territories. However, as a general rule the process of applying for an environmental approval generally has four stages: application, information, notification and decision. In the application stage, the proponent lodges an application and the regulator determines if the application has enough information to meet the requirements of the relevant statute. In the information stage, the regulator assesses the information contained in the application and may request further information from the proponent. In the notification stage, the regulator makes the application documents publicly available and the public have an opportunity to make submissions or in some cases object. At the final stage of the process, the regulator or decision maker decides either to approve the application with conditions or to refuse it.

REGULATORY AUTHORITIES

Regulatory authorities

22 | Which authorities are responsible for the environment and what is the scope of each regulator's authority?

Environmental regulatory authorities exist at both the Commonwealth level and the state and territory level. The Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW) is responsible for conducting assessments and mandatory environmental audits, granting permits and licences, issuing infringement notices, civil and criminal prosecution and remediation orders or determinations that address environmental damage under the Environment Protection and Biodiversity Conservation Act 1999 (Cth). The scope of the DCCEEW is limited to Commonwealth legislation.

Most states and territories have an independent environment protection regulator. For example, South Australia's Environment Protection Authority (EPA) is responsible for administering the Environment Protection Act 1993 (SA). In Queensland, the Department of Environment and Science is the environmental regulator with responsibility for administering the Environmental Protection Act 1994 (Qld). In New South Wales (NSW), the EPA is an independent authority and was established under the Protection of the Environment Administration Act 1991 (NSW).

Investigation

23 | What are the typical steps in an investigation?

Australian environment protection legislation confers broad investigatory powers on regulators. Regulators have the power to enter and remain on property, to remove property for further investigation, to compel the production of documents and information and to interview persons.

Some states have dedicated bodies that are established to investigate and prosecute environment-based offences. For example, in NSW, the EPA is an independent authority that has these functions.

The nature of the investigatory steps depends on the nature of the non-compliance, but a formal investigation typically precedes prosecution for an environment-based offence.

Prosecutions and fines do not automatically follow the breach of an environmental law. In most cases in Australia, prosecutors have discretion in relation to fining or prosecuting someone for the breach of environmental legislation.

Administrative decisions

24 | What is the procedure for making administrative decisions?

In most states and territories, two different procedures exist for making administrative decisions, one that requires the making of an application and another that does not.

First, for some administrative decisions, an application by a third party is not required. In this case, the administrative power is enlivened through the satisfaction of certain statutory preconditions. For example, a decision maker or regulator may have the power to amend the conditions of an approval unilaterally where the holder of the approval is in breach of the terms and conditions of approval.

Secondly, some administrative decisions require that an application be made before the power to make the decision is enlivened. In these cases, the decision maker is not itself allowed to make the application.

The procedure for the application and for the decision itself can, accordingly, vary considerably depending on the state and the nature of the application and decision. Where an application is required to be made, the relevant environmental legislation may prescribe its form, the information it must include and any assessment that must accompany it. In addition, many application processes require a public notification and consultation process.

Unless a court's jurisdiction has been effectively ousted by the statute under which the administrative decision has been made, the administrative decision can typically be reviewed under common law principles (eg, a writ of mandamus) or under the relevant state or federal administrative review statute (see, eg, Judicial Review Act 1991 (Qld); Commonwealth Administrative Decisions (Judicial Review) Act 1977 (Cth)).

Persons with the requisite standing have the right to be heard under the relevant state or federal administrative review legislation in respect of a reviewable decision. The evidence relied upon to challenge a reviewable decision will ordinarily be limited to what was before the decision maker at the time the decision was made.

Sanctions and remedies

25 | What are the sanctions and remedies that may be imposed by the regulator for violations?

A broad range of compliance mechanisms are available to state and territory regulators. For example, the Queensland Department of Environment and Science has recourse to warning letters, infringement notices, civil proceedings for court orders, enforceable undertakings and prosecutions for serious contraventions.

At the Commonwealth level, the Environment Protection and Biodiversity Conservation Act 1999 (Cth) includes three main compliance mechanisms: civil or criminal penalties (eg, for providing false or misleading information to obtain approvals); remediation orders and determinations; and enforceable undertakings.

In all Australian jurisdictions, there are substantial monetary penalties and the potential for imprisonment for environment based offences. In the case of companies, directors and persons involved in the management of the company can also be liable for actions of the company and, therefore, face fines or prosecution.

Appeal of regulators' decisions

26 | To what extent may decisions of the regulators be appealed, and to whom?

There are two forms of review available in Australia for decisions of regulators.

Under certain environmental law statutes and planning laws, an affected person can request a 'merits review' of an administrative decision. A merits review is where the person conducting the review (often a member of a tribunal) effectively stands in the shoes of the original decision maker. The reviewer may ask for and hear additional information. In these cases, the decision of the tribunal member will replace the original decision. There is no general right for merits review at common law, and so a right to seek merits review must be specifically provided for by statute. In most cases, merits reviews are subject to strict deadlines before which the appeal must be made.

The common law and judicial review statutes also allow for the formal review of the lawfulness of decisions. An application for judicial review can be made under traditional grounds of review, such as ultra vires and failure to afford procedural fairness. Where this type of appeal is lodged, the body charged with the review (typically a court) does not stand in the shoes of the original decision maker and instead reviews only the lawfulness of the decision. In that regard, the relief typically sought is that the impugned decision was invalid and is set aside.

Where there is a formal judicial review statute, it typically codifies and expands on the traditional common law grounds of review (see, eg, Administrative Decisions (Judicial Review) Act 1977 (Cth); Judicial Review Act 1991 (Qld)).

JUDICIAL PROCEEDINGS

Judicial proceedings

27 | Are environmental law proceedings in court civil, criminal or both?

Environmental law proceedings can be both civil and criminal. In most jurisdictions, specialist courts and tribunals have been established under enabling statutes to hear both civil and criminal matters.

Criminal matters in environmental law are typically associated with breaches of the law and prosecutions. Civil matters are associated with judicial review and merits appeals.

Examples of the specialist courts and tribunals include:

- Queensland: Land Court and the Planning and Environment Court;
- New South Wales (NSW): NSW Land and Environment Court;
- South Australia: Environment, Resources and Development Court; and
- Victoria: Victorian Civil and Administrative Tribunal.

Powers of courts

28 | What are the powers of courts in relation to infringements of environmental law?

In Australia, the breach of an environmental law is usually a criminal offence. For example, it is generally an offence to carry out certain activities or developments without the requisite approval. In addition, it can also be an offence to carry out an approved activity otherwise than in accordance with the approval itself. It is also typically an offence to breach a condition of approval or a requirement of a statute that applies to an activity.

The power of a court to hear proceedings for the infringements of environmental laws is largely conferred by the statute containing the relevant environmental law that has been breached.

In some cases, the states and territories have established specialist courts and tribunals to hear both civil and criminal matters outside of the main criminal courts.

Civil claims

29 | Are civil claims allowed regarding infringements of environmental law?

Infringements of environmental laws in Australia are typically criminal matters (ie, subject to criminal prosecution rather than civil proceedings).

Civil claims, such as contractual claims, may arise from infringements of environmental laws. The breach of the statute is unlikely to provide a civil cause of action in itself. The availability of a cause of action will depend on the relationship between the parties and the loss suffered. For example, a contractual claim may only be available where there is a contractual relationship between the parties and a causal connection between breach and loss. It is not unusual for contracts to contain warranties requiring compliance with environmental laws. A breach of an environmental law may also result in damage to a third party and a claim may lie in nuisance.

Defences and indemnities

30 | What defences or indemnities are available?

Australian environmental laws contain offences of strict liability as well as offences that have a knowledge element. As a general rule, strict liability offences are lesser in nature and involve a lesser degree of environmental harm. In contrast, the most serious environment offences are those where the offender has knowingly committed the offence.

The common law of Australia also recognises principles of vicarious liability and proportionate liability for criminal proceedings.

Each of the states has different environmental laws, which means the offences and available defences are also different. The existence and applicability of statutes of limitation also vary by jurisdiction.

The more common defences require the respondent to demonstrate that they took due care, reasonable steps or reasonable precautions to prevent the conduct of the impugned behaviour.

Directors' or officers' defences

31 | Are there specific defences in the case of directors' or officers' liability?

The relevant state and territory environmental statutes contain specific defences. Defences typically require the director or executive officer to demonstrate one of the following.

First, it must be shown that the director or officer was not in a position to influence the conduct of the corporation in relation to the contravention of the relevant provision.

Alternatively, where the director or officer is in a position to influence the conduct of the corporation, it must be shown that they used all due care to prevent the corporation's contravention. This can also be expressed such that the director or officer must show that they took all reasonable steps to ensure the corporation complied with the relevant provision.

Appeal process

32 | What is the appeal process from trials?

Australia is a common law jurisdiction and has a hierarchy of appellate courts.

In both civil and criminal matters there are typically three levels of appeals. There can be more in environmental law, where the review of a decision can be undertaken by the administrative body making the decision. Likewise, a specialist court such as the NSW Land and Environment Court may allow an appeal from a commissioner to a judge. Equally too, the nature of the decision, the relief sought, and the cause of action will largely dictate the availability of an appeal and, if an appeal is available, the grounds on which it may be made.

An appeal from a trial judge is typically made to a superior court constituted by a single judge. In most cases, the superior court is the Supreme Court of the relevant state, or the Federal Court for Commonwealth statutes. An appeal from the decision of a superior court can be made to the corresponding appeal court (eg, the Full Court of the Federal Court or the NSW Court of Appeal), which can be constituted by three or more judges.

A final appeal may be made to the High Court of Australia. In most cases, an appeal to the High Court requires the grant of 'special leave' by the High Court. There are no further appeals from the High Court.

INTERNATIONAL TREATIES AND INSTITUTIONS

International treaties

33 | Is your country a contracting state to any international environmental treaties, or similar agreements?

Australia is a party to multiple international environmental treaties. The Department of Foreign Affairs and Trade maintains the Australian Treaties Database, a database of international treaties to which Australia is a party. The database lists 170 current treaties to which Australia is a party where 'Environment and Resources' is listed as a subject.

International treaties and regulatory policy

34 | To what extent is regulatory policy affected by these treaties?

Although international treaties are not generally enforceable under Australian domestic law, they do have a substantial influence on the content and evolution of Australian environmental law.

The best example is the Environment Protection and Biodiversity Conservation Act 1999 (Cth). This Act provides a framework to implement a number of conventions and international agreements – for example, the Ramsar Convention, the World Heritage Convention, the Bonn Convention, the Japan–Australia Migratory Bird Agreement and the China–Australia Migratory Bird Agreement.

UPDATE AND TRENDS

Key developments of the past year

35 | Are there any emerging trends or hot topics in environment law in your jurisdiction?

The first trend is our response to climate change. Australia does not have a carbon-pricing mechanism or carbon tax that directly operates to manage the reduction of emissions. Climate change and regulatory reform is a constantly evolving area of Australian environmental law. Touch points include water management (because water is a scarce resource in an arid country like Australia) and the regulation of large emitters of greenhouse gases.

In that regard, the Climate Change Bill 2022 (Cth) was introduced to the House of Representatives on 27 July 2022, and, if enacted, will set out Australia's greenhouse gas emissions reduction targets consistent with Australia's Nationally Determined Contribution (communicated under the Paris Agreement to the UN), and enhance transparency and accountability by requiring the provision of an annual climate change statement to Parliament by the Minister for Climate Change and Energy.

Additionally, the Offshore Electricity Infrastructure Act 2021 (Cth) commenced on 2 June 2022 and establishes a regulatory framework to facilitate offshore renewable energy projects in Commonwealth waters.

The second trend is in land use. Australia has a large resources sector and a large agricultural sector, both of which are critical to the Australian economy. Environmental laws (in part) manage the interaction between the two sectors. There is continuing evolution of Australian environmental laws to manage the interactions between competing land uses and to protect the receiving environment.

The third trend is in the area of Commonwealth regulation.

The Final Report of the Independent review of the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (the EPBC Act) was submitted to the Minister for the Environment on 30 October 2020 and publicly released on 28 January 2021. The Final Report's central recommendation is the introduction of new legally enforceable national environmental standards including standards for matters of national environmental significance and indigenous engagement and participation that can be applied by the relevant regulatory bodies. The Final Report also recommended that the EPBC Act should be immediately amended to enable the development and implementation of these standards. The reform process for the EPBC Act is under way.

The Environment Protection and Biodiversity Conservation Amendment (Standards and Assurance) Bill 2021 (Cth) intended to establish a framework for the making, varying, revoking and application of national environmental standards was introduced to the Senate on 3 August 2021; however, it lapsed on 25 July 2022.

Similarly, the Environment Protection and Biodiversity Conservation Amendment (Streamlining Environmental Approvals) Bill 2020 (Cth) intended to establish the legal framework for streamlined approvals by allowing the Commonwealth to delegate environmental approval powers to the states and territories through bilateral agreements (to create 'single touch' environmental approvals) lapsed on 25 July 2022.

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LEGISLATION

Main environmental regulations

1 | What are the main statutes and regulations relating to the environment?

The main statutes and regulations relating to the environment at EU level are dispersed in various directives and regulations, including the following:

- Directive 2010/75/EU (the Industrial Emissions Directive);
- Directive 2004/35/EC (the Environmental Liability Directive);
- Directive 2008/98/EC (the Waste Framework Directive);
- Directive 2008/50/EC (the Ambient Air Quality Directive);
- Directive 2000/60/EC (the Water Framework Directive);
- Directive 2008/56/EC (the Marine Strategy Framework Directive);
- Directive 2009/147/EC (the Birds Directive);
- Directive 92/43/EEC (the Habitats Directive;
- Directive 2002/49/EC (the Environmental Noise Directive);
- Directive 2014/95/EU (the Non-Financial Reporting Directive);
- Directive 2011/92/EU (the Environmental Impact Assessment Directive); and
- Directive 2001/42/EC (the Strategic Environmental Assessment Directive).

In addition, several pieces of legislation in relation to specific topics exist, such as Directive 2006/66/EC (the Batteries Directive), Directive 2000/53/EC (the End of Life Vehicles Directive), Directive 1999/31/EC (the Landfill Directive), Directive 2006/21/EC (the Mining Waste Directive), Directive 94/62/EC (the Packaging and Packaging Waste Directive), Directive 96/59/EC (the Directive on the Disposal of PCBs/PCTs), Directive 2011/65/EU (the RoHS Directive), Directive 86/278/EEC (the Sewage Sludge Directive), Regulation (EU) No. 1257/2013 (the Ship Recycling Regulation), Regulation (EU) 2019/1021 (the POPs Regulation), Regulation (EC) No. 1013/2006 (the Waste Shipments Regulation), and Directive 2012/19/EU (the WEEE Directive).

Most directives and regulations foresee the possibility for member states to sanction breaches of environmental law; this is thus regulated on a member state level.

Integrated pollution prevention and control

2 | Is there a system of integrated control of pollution?

Yes. Directive 2010/75/EU (the Industrial Emissions Directive) forms the main EU instrument regulating pollutant emissions from industrial installations. The Industrial Emissions Directive relates to all the environmental impacts of a number of activities that are subject to prior review and (as the case may be) specific conditions. The specific conditions may be re-examined and updated in the course of the operation of the installations or activities.

According to the Industrial Emissions Directive, installations are subject to a prior review, operating conditions and monitoring. Installations include all stationary technical units in which one or more activities in the following sectors are carried out: energy, metal production and processing, minerals, chemicals, waste management and other sectors such as pulp and paper production, slaughterhouses and the intensive rearing of poultry and pigs.

First, member states are obliged to take all necessary measures to ensure that no installation as mentioned above, combustion plant, waste incineration plant or waste co-incineration plant is operated without a permit.

According to the Industrial Emissions Directive, the permit must include all measures required to achieve a high level of environmental protection in general and to ensure that the installation is operated in compliance with the general principles governing the operator's basic obligations. The permit must, inter alia, also include emission limit values for polluting substances, or equivalent parameters or technical measures and monitoring requirements.

The permit conditions should be set on the basis of the best available techniques (BATs), that is, the most effective and advanced stage in the development of activities and their methods of operation which indicates the practical suitability of particular techniques for providing the basis for emission limit values and other permit conditions designed to prevent and, where that is not practicable, to reduce emissions and the impact on the environment as a whole.

Second, member states are given the possibility to include requirements for certain categories of installations, combustion plants, waste incineration plants or waste co-incineration plants by the means of 'general binding rules'. In this regard, member states must ensure an integrated approach and a high level of environmental protection equivalent to that achievable with individual permit conditions.

Lastly, a system of monitoring is foreseen. According to the Industrial Emissions Directive, operators must supply the competent authority at least annually with information on the basis of results of emission monitoring and other required data that enables the competent authority to verify compliance with the permit conditions. In addition, the Industrial Emissions Directive obliges member states to set up a system of environmental inspections of installations addressing the examination of the full range of relevant environmental effects from the installations concerned and to draw up inspection plans accordingly. Every one to three years, using risk-based criteria, a visit to the installations must take place.

As announced in the European Green Deal, the European Commission proposed a revision of the EU measures addressing pollution from large industrial installations (including a revision of the Industrial Emissions Directive). To this effect, the Commission launched an Open Public Consultation on 22 March 2021, and following an impact assessment involving stakeholder consultations, published a proposal for its revision of the Directive on 5 April 2022.

Soil pollution

3 | What are the main characteristics of the rules applicable to soil pollution?

At EU level, there is no binding, overarching framework that defines (parameters for) soil protection or rules applicable to soil pollution; such rules are mainly set by the member states, detailing the person or persons that are responsible for clean-up activities, applicable thresholds for investigating (and as the case may be, remediating) soil pollution, etc.

The EU rules applicable to soil pollution are mostly derived as a consequence of delivering environmental objectives that are not explicitly soil-focused, such as the reduction of contamination and the prevention and remedying of environmental damage. These objectives are enshrined in a suite of pieces of EU legislation, including Directive 2004/35/EC (the Environmental Liability Directive) and the Industrial Emissions Directive.

Regulation of waste

4 | What types of waste are regulated and how?

Directive 2008/98/EC (the Waste Framework Directive) forms the framework of general rules that apply to all categories of waste and integrates or consolidates formerly applicable (specific) directives, in particular with regard to hazardous waste and the disposal of waste oils. The abandonment, dumping or uncontrolled management of waste is prohibited by the Waste Framework Directive.

Waste includes any substance or object that the holder discards or intends or is required to discard. It does not cover certain types of waste, such as gaseous effluents, land (in situ), uncontaminated soil, radioactive waste, decommissioned explosives, faecal matter, animal by-products and waste from extraction activities.

In particular, waste should not be confused with by-products. By-products are substances or objects obtained from production processes, where the primary aim is not the production of those items, when the following four conditions are fulfilled:

- the further use of the substance or object is certain;
- the substance or object can be used directly without any further processing other than normal industrial practice;
- the substance or object is produced as an integral part of a production process; and
- further use is lawful.

Animal by-products are separately regulated under Regulation (EC) No. 1069/2009, laying down health rules as regards animal by-products and derived products not intended for human consumption.

The Waste Framework Directive sets out a waste hierarchy that applies as a priority order in waste prevention and management legislation and policy: prevention, preparing for reuse, recycling, other recovery and disposal. Member states should take appropriate measures to this end.

Member states must require establishments or undertakings intending to carry out waste treatment to obtain a permit from the (national) competent authority. Such permit must specify the types and quantities of waste that may be treated, the technical and any other requirements relevant to the site concerned, the safety and precautionary measures to be taken, the method to be used for each type of operation, monitoring and control operations (as far as necessary) and closure and after-care provisions (as far as necessary).

Furthermore, the Waste Framework Directive introduces the 'polluter pays' principle, which entails that the costs of waste management shall be paid by the original waste producer, and the 'extended producer responsibility' concept, which consists of a set of measures taken by member states to ensure that producers of products bear financial responsibility for the management of the waste stage of a product's life cycle. It furthermore incorporates certain provisions on hazardous waste (ie, waste that displays one or more of the hazardous properties listed in Annex III of the Waste Framework Directive) and waste oils (ie, any mineral or synthetic lubrication or industrial oils which have become unfit for the use for which they were originally intended, such as used combustion engine oils and gearbox oils, lubricating oils, oils for turbines and hydraulic oils). Within the context of the European Green Deal, a targeted revision of the Waste Framework Directive, focusing on waste oils as well as prevention, separate collection and textiles, is set to be adopted by the Commission in mid-2023.

In addition to the Waste Framework Directive, several pieces of legislation on specific categories of waste exist, such as Directive 2006/66/EC (the Batteries Directive), Directive 2000/53/EC (the End of Life Vehicles Directive), Directive 1999/31/EC (the Landfill Directive), Directive 2006/21/EC (the Mining Waste Directive), Directive 94/62/EC (the Packaging and Packaging Waste Directive), Directive 96/59/EC (the Directive on the Disposal of PCBs/PCTs), Directive 2011/65/EU (the RoHS Directive), Directive 86/278/EEC (the Sewage Sludge Directive), Regulation (EU) No. 1257/2013 (the Ship Recycling Regulation), Regulation (EU) 2019/1021 (the POPs Regulation), Regulation (EC) No. 1013/2006 (the Waste Shipments Regulation), and Directive 2012/19/EU (the WEEE Directive).

Regulation of air emissions

5 | What are the main features of the rules governing air emissions?

Regarding air emissions, a distinction should be made between the rules concerning ambient air quality and clean air on the one hand, and the rules concerning emissions of pollutants on the other hand.

Directive 2008/50/EC (the Ambient Air Quality Directive) provides for concentration limit values and alert triggers, as well as the establishment of air quality plans. According to this Directive, air ambient quality must be assessed in all agglomerations. These are conurbations with a population in excess of 250,000 inhabitants or with a given population density per km² to be set by the member states.

The concentration limit values are fixed on the basis of scientific knowledge, with the aim of avoiding, preventing or reducing harmful effects on human health and the environment, and must be attained within a given period and must not be exceeded once attained. They should be distinguished from critical levels and alert triggers.

In addition, air quality plans set out measures to attain the limit values or target values, which must be established by member states in agglomerations where the levels of pollutants in ambient air exceed the concentration limit value (increased by any relevant margin of tolerance).

Regarding measures concerning emissions of pollutants, several aspects are regulated. First, the emissions of motor vehicles and their fuels are regulated. Numerous directives and regulations exist in this regard. Introduced in Regulation 595/2009 for heavy-duty vehicles and Regulation 715/2007 for light-duty vehicles, the so-called EURO 6/VI standards entail the emission limit values for motor vehicles and are mandatory for all vehicles placed on the market since 2015. Standards have also been set for fuels, including limit values for lead and benzene with respect for petrol and sulphur for diesel fuel. It should be noted that member states can require that fuels must comply with more stringent specifications for all or part of the vehicle fleet. Second, the emissions of certain plants (eg, combustion plants and volatile organic compounds) are regulated. The main tool used by the relevant directive in this regard, the Industrial Emissions Directive, is emission limit values.

The measures regarding emission reduction that apply to activities or goods that release greenhouse gases (GHGs) are described in the

European Union Climate Regulation chapter of *Lexology Getting the Deal Through – Environment & Climate Regulation*.

Protection of fresh water and seawater

6 | How are fresh water and seawater, and their associated land, protected?

Directive 2000/60/EC (the Water Framework Directive) and Directive 2008/56/EC (the Marine Strategy Framework Directive) form the main legal framework for the protection of fresh water and marine resources.

The Water Framework Directive foresees a framework for the protection of inland surface waters, transitional waters, coastal waters and groundwater. In this regard, the Directive provides for both structures as well as instruments.

First, member states must identify the river basins located within their territories, which are then regrouped in river basin districts. It is at the level of such districts that the management of water resources must take place, which implies that all administrative arrangements for the application of the Directive must be made individually within each district.

Second, member states are bound to systematic observation. This implies that they must ensure that they establish programmes with the purpose of monitoring the water status within each river basin district.

Third, member states are requested to establish river basin management plans, as well as specific programmes of measures to achieve the objectives of the Water Framework Directive. River basin management plans are established for each river basin district and include, inter alia, a summary of significant pressures and the impact of human activity on the status of surface water and groundwater.

The Water Framework Directive is supported by other directives, such as Directive 2006/118/EC (the Groundwater Directive), Directive 98/83/EC (the Drinking Water Directive), Directive 2006/7/EC (the Bathing Water Directive), Directive 91/676/EEC (the Nitrates Directive), Directive 91/271/EEC (the Urban Waste Water Treatment Directive), Directive 2008/105/EC (the Environmental Quality Standards Directive) and Directive 2007/60/EC (the Floods Directive). The Urban Waste Water Treatment Directive, for example, sets minimum standards and timetables for the collection, treatment and discharge of urban wastewater.

The Marine Strategy Framework Directive made it a priority to achieve a good environmental status of the European marine waters by 2020 and to continue its protection and preservation, as well as to prevent subsequent deterioration.

To achieve the aforementioned good environmental status, member states had to develop their own ecosystem-based strategies for their marine waters, which had to be reviewed every six years. The strategy included, inter alia, the establishment of environmental targets and associated indicators, as well as a monitoring programme and regular updates of targets to achieve good environmental status by 2020.

In 2020, the EU Biodiversity Strategy for 2030 was adopted, aiming to further strengthen the protection of marine ecosystems.

Protection of natural spaces and landscapes

7 | What are the main features of the rules protecting natural spaces and landscapes?

With regard to the conservation of flora and fauna species and their habitats, two directives are relevant, namely Directive 2009/147/EC (the Birds Directive) and Directive 92/43/EEC (the Habitats Directive). Central to both Directives are the designation and conservation of special protection areas for certain bird species (the Birds Directive) and special areas of conservation for certain natural habitats and wild fauna and flora (the Habitats Directive). These two types of areas form the Natura 2000 network, which forms a coherent European ecological network.

As far as natural spaces and landscapes are concerned, the Habitats Directive is the most relevant due to its protection of natural habitats. Natural habitats are terrestrial or aquatic areas distinguished by geographic, abiotic and biotic features, whether entirely natural or semi-natural. The aim of the Habitats Directive is to ensure, through the designation of special areas of conservation, the restoration or maintenance of natural habitats and species of Community interest at a favourable conservation status. Annexes I and II list these natural habitat types and species respectively.

In the Habitats Directive, the protection of the aforementioned areas and against harmful plans and projects is regulated as well. The protection requirements stipulate, inter alia, that plans or projects that adversely affect special areas of conservation may be authorised only under certain cumulative conditions: an appropriate assessment must be carried out and the public must be given the opportunity to participate. If the appropriate assessment concludes that the plan or project will have significant effects in the area, further conditions must be fulfilled.

In principle, it is up to the member states to make the special areas of conservation subject to a set of appropriate rules for their conservation. The Habitats Directive does not specify in detail what measures a member state must take, but that member states must maintain or restore a favourable conservation status for natural habitats and, in particular, special areas of conservation through conservation measures, preventive measures and compensatory measures. However, the Habitats Directive stresses that, in the special areas of conservation, there must be no deterioration of natural habitats and the habitats of species, nor disturbance of the species for which the areas have been designated. The same applies in relation to the Birds Directive.

Protection of flora and fauna species

8 | What are the main features of the rules protecting flora and fauna species?

With regard to the conservation of flora and fauna species, the Birds Directive and the Habitats Directive are relevant.

The Habitats Directive protects flora and fauna species in the following way: for species listed in Annex IV, a strict protection regime must be applied across their entire natural range within the EU, both within and outside Natura 2000 sites; and for species listed in Annex V, member states shall take measures to ensure that the exploitation and taking in the wild of aforementioned species is compatible with maintaining them in a favourable conservation status.

Regarding the protection of fauna, the Birds Directive is relevant. The Birds Directive aims to protect all wild bird species that naturally occur in the EU. The Directive protects the wild bird species in the following way: for wild bird species listed in Annex I and for all migratory bird species, member states must designate special protection areas for their survival; and only wild bird species listed in Annex II can be hunted, albeit under certain conditions.

Furthermore, both Directives ban several activities. The Birds Directive stipulates a number of prohibitions on the taking, possessing and trading of, in principle, all species of birds covered by the Birds Directive. This includes the deliberate capture or killing of birds and the destruction of their nests. The Habitats Directive contains a number of prohibitions on taking, possessing and trading as well. In addition, regulations on habitat protection are mentioned in the Habitats Directive. By a way of example, the damage or destruction of breeding sites or resting places of the animal species concerned is, in principle, prohibited.

Noise, odours and vibrations

9 | What are the main features of the rules governing noise, odours and vibrations?

Directive 2002/49/EC (the Environmental Noise Directive) aims to define a common approach intended to avoid, prevent or reduce on a prioritised basis the harmful effects, including annoyance, due to exposure to environmental noise. Environmental noise entails unwanted or harmful outdoor sound created by human activities, including noise emitted by means of transport, road traffic, rail traffic and air traffic, and from sites of industrial activity such as those defined in Annex I to Directive 96/61/EC (the IPPC Directive, which, in the meantime, has been replaced by the Industrial Emissions Directive).

According to the Environmental Noise Directive, the following actions must be implemented by the member states:

- the determination of exposure to environmental noise through noise mapping;
- ensuring that information on environmental noise and its effects is made available to the public; and
- the adoption of action plans, based upon the noise-mapping results, with a view to preventing and reducing environmental noise where necessary and particularly where exposure levels can induce harmful effects on human health and to preserving environmental noise quality where it is good.

In addition to the Environmental Noise Directive, there are various directives that define the maximum permissible sound levels that a range of products must comply with to be placed on the market. By way of example, motor vehicles, lorries, buses and aeroplanes are subject to limits on sound emission values.

Lastly, regarding odours, the Industrial Emissions Directive should be mentioned, as it obliges member states to take all necessary measures to ensure that industrial activities giving rise to pollution are covered under a permit. The permit conditions should be set on the basis of BATs.

Liability for damage to the environment

10 | Is there a general regime on liability for environmental damage?

The Environmental Liability Directive forms a framework based on the polluter pays principle to prevent and remedy environmental damage.

Environmental damage is defined as damage to protected species and natural habitats (ie, any damage that has significant adverse effects on reaching or maintaining the favourable conservation status of such habitats or species), damage to water (ie, any damage that significantly adversely affects the ecological, chemical or quantitative status or the ecological potential of the waters concerned and the environmental status of the marine waters concerned) and damage to land (ie, any land contamination that creates a significant risk of human health being adversely affected as a result of the direct or indirect introduction, in, on or under land, of substances, preparations, organisms or micro-organisms).

According to the Environmental Liability Directive, the principle is that an operator whose activity has caused environmental damage or causes the imminent threat of such damage is to be held financially responsible. In this way, operators are encouraged to adopt measures and develop practices to minimise the risks of environmental damage so that their exposure to the financial consequences of their liability is reduced.

The Environmental Liability Directive applies to:

- environmental damage caused by any of the occupational activities listed in Annex III of the Directive and to any imminent threat of such damage, occurring by reason of any of those activities; and
- damage to protected species and natural habitats caused by any occupational activities other than those listed in Annex III of the Directive, and to any imminent threat of such damage occurring by reason of any of those activities, whenever the operator has been at fault or negligent.

Among other things, the Environmental Liability Directive lays down a number of important obligations for operators. For instance, the Environmental Liability Directive provides that the operator must take the necessary preventive measures immediately when environmental damage has not yet occurred but there is an imminent threat of such damage occurring. When environmental damage has occurred, the operator must immediately inform the competent authority of all relevant aspects of the situation and take all steps to immediately control, contain, remove or otherwise manage the relevant pollutants and any other damage factors to limit or prevent further environmental damage and adverse effects on human health. In addition, the operator must also take all necessary remedial measures. The operator shall bear the costs for the preventive and remedial measures taken.

Environmental taxes

11 | Is there any type of environmental tax?

The European environmental tax revenue is broken down into the following four categories: energy taxes, transport taxes, pollution taxes and resource taxes.

The taxation differs from member state to member state, apart from energy taxation. As required by Directive 2003/96/EC, there is comprehensive energy taxation in the member states.

Environmental reporting

12 | Are there any notable environmental reporting requirements (eg, regarding emissions, energy consumption or related environmental, social and governance (ESG) reporting obligations)?

Yes. According to Directive 2014/95/EU (the Non-Financial Reporting Directive), all large undertakings or parent undertakings of a group exceeding on their balance sheet an average number of 500 employees during the financial year must disclose information on the way they operate and manage social and environmental challenges. More specifically, in their management report, undertakings must include a non-financial statement containing information to the extent necessary for an understanding of the undertaking's development, performance, position and impact of its activity, relating to, as a minimum, environmental, social and employee matters, respect for human rights, anti-corruption and bribery matters.

A proposal for a Corporate Sustainability Reporting Directive has been adopted in April 2021, which would, inter alia, extend the scope of the Non-Financial Reporting Directive to all large companies and all companies listed on regulated markets (except listed micro-enterprises), require the audit of reported information and introduce more detailed reporting requirements.

With Regulation (EC) No 166/2006, the EU also established a European Pollutant Release and Transfer Register by which the operator of each facility listed in Annex I to the Regulation must report the amounts of pollutants released into the atmosphere annually to its competent authority. This reported information must then be made easily available to the public. This E-PRTR Regulation is currently under revision and the Commission has adopted a proposal for revision on 5 April 2022.

Additionally, the EU and the member states, as parties to the United Nations Framework Convention on Climate Change, the Kyoto Protocol and the Paris Agreement, are obliged to both report annually on their

GHG emissions, as well as to report regularly on their climate policies, measures and progress to the United Nations. Regarding the annual reporting on emissions, the Regulation on the Governance of the Energy Union is of importance, as it lays down a monitoring mechanism for GHG emissions and sets out the EU's own internal reporting rules.

Government policy

13 | How would you describe the general government policy for environmental issues? How are environmental policy objectives influencing the legislative agenda?

The general government policy for environmental issues is gaining increased attention and is being reinforced and accelerated as part of the European Green Deal.

To achieve the European Green Deal's objectives, the EU has set the ambitious goal to further cut GHG emissions by at least 55 per cent by 2030 and to become the world's first climate-neutral continent by 2050. To this extent, on 14 July 2021, the European Commission adopted a series of legislative proposals setting out how it intends to achieve climate neutrality by 2050. The 'Fit for 55' legislative proposals cover a wide range of policy areas, including environmental and climate issues. Following the war in Ukraine, the EU has furthermore doubled down on energy transition.

HAZARDOUS ACTIVITIES AND SUBSTANCES

Regulation of hazardous activities

14 | Are there specific rules governing hazardous activities?

Yes. The permitting of hazardous activities is regulated on a member state level but follows from Directive 2010/75/EU (the Industrial Emissions Directive) as well. The Industrial Emissions Directive obliges member states to take all necessary measures to ensure that industrial activities giving rise to pollution are only operated under a permit. The permit conditions should be set on the basis of the best available techniques.

Regulation of hazardous products and substances

15 | What are the main features of the rules governing hazardous products and substances?

Hazardous products and substances are regulated under various pieces of EU legislation (depending on the nature of the products or substances).

In relation to chemicals, REACH is the key piece of legislation. REACH aims to ensure a high level of protection of human health and the environment, including the promotion of alternative methods for the assessment of hazards of substances, as well as the free circulation of substances on the internal market while enhancing competitiveness and innovation.

In principle, all existing and new chemical substances are covered by REACH. There are, however, exceptions. The underlying principle is that chemical substances that are subject to other European legislation that guarantees the same high level of protection of human health and the environment are not subject to REACH.

REACH lays down a system that may require registration, evaluation, authorisation and restrictions. First, chemicals cannot be manufactured or placed on the market as such in quantities of one tonne or more per year by any manufacturer or importer or contained in one or more preparations unless it has been registered. This is also referred to as 'no data, no market'. Secondly, the test proposals are reviewed, with particular attention to those involving vertebrate animals. Lastly, certain chemicals ('substances of very high concern') are subject to prior authorisation. In addition, if the manufacture, the placement on the market or use of certain hazardous substances involve unacceptable risks to human health or the environment, they may be (made) subject to restrictions.

Hazardous substances are subject to specific pieces of legislation. For instance, in relation to genetically modified organisms, their contained use and deliberate release into the environment are regulated by Directive 2001/18/EC and Directive 2009/41/EC (eg, all deliberate releases of genetically modified organisms must give rise to one or several notifications, where their containment is reduced as their assessment progresses). Other regulated (hazardous) substances include, inter alia, biocidal products (Regulation (EU) 528/2012), POPs (the POPs Regulation) and asbestos (Directive 2009/148/EC).

Industrial accidents

16 | What are the regulatory requirements regarding the prevention of industrial accidents?

The SEVESO III Directive aims to prevent major accidents involving dangerous substances and limit the consequences for people and the environment should such accidents occur despite preventive measures.

The SEVESO III Directive applies to establishments where dangerous substances are present in quantities equal to or in excess of the thresholds set out in Annex I to the Directive. The SEVESO III Directive makes a distinction between lower-tier and upper-tier establishments, depending on the quantities of dangerous substances present.

The operator of such an establishment is required to take all necessary measures to prevent major accidents and to limit their consequences for people and the environment. This includes submitting a notification file and (in the case of an upper-tier establishment) a safety report to the competent authority, giving detailed information on the substances concerned, the installation and the protection and intervention measures. Operators of upper-tier establishments also have to draw up an internal emergency plan. For new installations, the notification must be made before the installation is brought into operation.

On the basis of the information provided, the competent authority must draw up an external emergency plan. Internal and external emergency plans should be reviewed at appropriate intervals and revised if necessary. The establishments concerned should also be inspected and monitored on a regular basis.

According to the SEVESO III Directive, member states should integrate the aim of preventing major accidents and limiting the consequences of such accidents into land-use planning and other relevant policies. This is thus regulated on a member state level.

Lastly, the population at risk must be adequately informed. Information obtained pursuant to the Directive should be available to any person requesting it. Exceptions may be made for reasons of confidentiality. When a major accident occurs, the operator must immediately inform the authorities and provide the information described in the SEVESO III Directive. The Commission will, on the basis of reports from the member states, provide a register and an information system containing details of major accidents that have occurred within the territory of the member states.

ENVIRONMENTAL ASPECTS IN TRANSACTIONS AND PUBLIC PROCUREMENT

Environmental aspects in M&A transactions

17 | What are the main environmental aspects to consider in M&A transactions?

The main environmental aspects to be considered in M&A transactions are to be assessed on a case-by-case basis, and in light of the domestic environmental rules. These range from permits, soil pollution and noise to the use of hazardous substances.

As a general rule, asset deals require increased attention, as such deals may trigger additional requirements (such as notification obligations towards the competent national authorities in case of a transfer of an environmental permit, or compliance with transfer of land rules, in case of (potentially) polluted land), whereas share deals usually do not trigger such obligations. However, environmental due diligence has become quite standard, in the context of both asset and share deals, and nowadays, many buyers are seeking protection for environmental matters (regardless of whether this is in an asset purchase agreement or a share purchase agreement).

Environmental aspects in other transactions

18 | What are the main environmental aspects to consider in other transactions?

It is common to perform environmental due diligence in other types of transactions (such as IPOs or real-estate transactions or corporate restructuring matters) to identify environmental risks that must be disclosed (eg, breaches of permits, the presence of asbestos or soil pollution and related costs), transfer requirements or factors that could delay the transaction (eg, in case soil pollution must be further investigated or remediated, before the transaction can take place or before a forced sale can take place in case of a bankruptcy).

Environmental aspects in public procurement

19 | Is environmental protection taken into consideration by public procurement regulations?

Contracting authorities have wide discretion when defining the subject matter of the contract, as Directive 2014/24/EU (the Public Procurement Directive) does not prevent them from implementing or imposing environmental considerations or requirements. Environmental considerations may be integrated at various stages of the public procurement procedure.

First, the technical specifications or the award criteria may be formulated in terms of performance or functional requirements, including environmental aspects (eg, environmental and climate performance levels or production processes and methods).

Secondly, environmental considerations may be relevant or decisive in the selection phase and award phase. The Public Procurement Directive explicitly states in article 18(2) that member states must take appropriate measures to ensure that in the performance of public contracts economic operators comply with applicable obligations in the fields of environmental, social and labour law established by national law, EU law, collective agreements or the international provisions listed in Annex X of that Directive. As a general principle, contracting authorities may decide not to award a contract to the tenderer submitting the most economically advantageous tender where they have established that the tender does not comply with the applicable obligations referred to in article 18(2) of the Public Procurement Directive.

Furthermore, both mandatory and optional grounds of exclusion are laid down in the Public Procurement Directive. According to the Directive, contracting authorities may exclude any economic operator from participation in a procurement procedure when environmental obligations are violated. Contracting authorities must, however, reject the tender, when they have established that the tender is abnormally low because it does not comply with applicable obligations referred to in article 18(2).

Lastly, environmental considerations are also possible in the contract performance stage. Namely, the Public Procurement Directive authorises the contracting authorities to set out specific conditions relating to the performance of a contract, which may include economic, innovation-related, environmental, social or employment-related considerations.

It should be mentioned that the Public Procurement Directive gives member states the discretionary power to implement in their legislation that contracting authorities do not have to use price or cost as the sole award criterion. This enables contracting authorities to award contracts based on the best price-quality ratio as determined by the award criteria, which may include environmental considerations.

ENVIRONMENTAL ASSESSMENT

Activities subject to environmental assessment

20 | Which types of activities are subject to environmental assessment?

With regard to environmental assessment, a distinction should be made between projects, which are subject to Directive 2011/92/EU (the Environmental Impact Assessment Directive), and plans and programmes, which are subject to Directive 2001/42/EC (the Strategic Environmental Assessment Directive).

Regarding projects, the Environmental Impact Assessment Directive stipulates that, before consent is given, projects that are likely to have significant effects on the environment by virtue of, inter alia, their nature, size or location are subject to a requirement for development consent and an assessment with regard to their effects.

More specifically, the Environmental Impact Assessment Directive applies to certain public and private projects likely to have significant effects on the environment. However, the Environmental Impact Assessment Directive provides for exceptions for projects serving national defence purposes and projects adopted by a specific act of national legislation. In *World Wildlife Fund (WWF) and Others v Autonome Provinz Bozen and Others*, the CJEU made it clear that these exceptions must be interpreted restrictively.

In the Environmental Impact Assessment Directive, a distinction is made between projects that are always subject to environmental impact assessment and that are included in Annex I of the Directive (eg, crude oil refineries, nuclear power plants and construction of motorways) and projects that are subject to environmental impact assessment at the discretion of the member states and that are included in Annex II of the Directive (eg, land consolidation projects, wind farms, permanent camping sites). Regarding the latter, member states must assess this on a case-by-case basis, using thresholds or criteria, taking into account the selection criteria set out in Annex III of the Directive (such as the size of the project, the risk of accidents and the sensitivity of the area concerned).

Regarding plans and programmes, the Strategic Environmental Assessment Directive aims to contribute to the integration of environmental considerations into the preparation and adoption of plans and programmes. Certain plans and programmes that are likely to have significant effects on the environment are subject to an environmental assessment under this Directive.

More specifically, the Strategic Environmental Assessment Directive applies to the preparation, adoption and modification of plans and programmes by a public authority. An environmental assessment must be carried out for all plans and programmes that are prepared in relation to agriculture, forestry, fisheries, energy, industry, transport, waste management, water management, telecommunications, tourism, town and country planning or land use and that set the framework for future development consent of projects for which a project environmental impact assessment is required under the Environmental Impact Assessment Directive.

Such an environmental assessment should, according to the Strategic Environmental Assessment Directive, also be carried out for

all plans and programmes that are likely to have an adverse effect on the Natura 2000 network. For other and smaller plans and programmes, the environmental assessment is only required if they are likely to have significant environmental effects.

Environmental assessment process

21 | What are the main steps of the environmental assessment process?

With regard to the environmental assessment process, a distinction should be made between projects, plans and programmes.

Regarding projects, member states must ensure that projects covered by the environmental assessment are subject to development consent. Before such consent is granted, projects must be subject to an environmental assessment. Environmental assessment involves the proper identification, description and evaluation of direct and indirect effects on the environment.

An environmental assessment shall include, inter alia, a description of the project, a description of the measures to prevent, reduce and restore any adverse effects, the data required to identify and assess the main effects of the project on the environment, an outline of the alternatives not retained and a non-technical summary of the data provided. The information required is given in Annex IV of the Environmental Impact Assessment Directive. The responsibility for drawing up the environmental report lies with the initiator.

In addition, member states must ensure that the different environmental authorities concerned can express an opinion and that the application for development consent and the environmental report are made available for public examination within a reasonable time before the decision on the application for development consent is taken.

The environmental assessment, the results of consultations with environmental authorities and public participation must be taken into account in the development consent procedure. The decision must be reasoned and made public.

Regarding plans and programmes, the environmental assessment must be carried out during the preparation and before the adoption of a plan or programme. An environmental report is prepared in which the likely significant environmental effects of implementing the plan or programme and reasonable alternatives are identified, described and evaluated. In an annex, Directive 2001/42/EC (the Strategic Environmental Assessment Directive) defines the information to be provided. There are similar provisions to the Environmental Impact Assessment Directive with regard to consultations, public enquiries and transboundary consultations. The environmental report and the opinions expressed during the consultations are taken into account during the preparation of the plan or programme and before its adoption.

Once a plan or programme has been adopted, information on it is supplied to the authorities concerned, the public and any member states consulted. This information shall include the plan or programme adopted and a statement of how environmental considerations and the environmental report have been taken into account and the comments made. In addition, this statement shall summarise the reasons for choosing the plan or programme as adopted, in the light of the other reasonable alternatives dealt with.

REGULATORY AUTHORITIES

Regulatory authorities

22 | Which authorities are responsible for the environment and what is the scope of each regulator's authority?

This is regulated on a member state level.

Investigation

23 | What are the typical steps in an investigation?

This is regulated on a member state level.

Administrative decisions

24 | What is the procedure for making administrative decisions?

This is regulated on a member state level.

Sanctions and remedies

25 | What are the sanctions and remedies that may be imposed by the regulator for violations?

This is regulated on a member state level.

Appeal of regulators' decisions

26 | To what extent may decisions of the regulators be appealed, and to whom?

This is regulated on a member state level.

JUDICIAL PROCEEDINGS

Judicial proceedings

27 | Are environmental law proceedings in court civil, criminal or both?

This is regulated on a member state level.

Powers of courts

28 | What are the powers of courts in relation to infringements of environmental law?

This is regulated on a member state level.

Civil claims

29 | Are civil claims allowed regarding infringements of environmental law?

This is regulated on a member state level.

Defences and indemnities

30 | What defences or indemnities are available?

This is regulated on a member state level.

Directors' or officers' defences

31 | Are there specific defences in the case of directors' or officers' liability?

This is regulated on a member state level.

Appeal process

32 | What is the appeal process from trials?

This is regulated on a member state level.

INTERNATIONAL TREATIES AND INSTITUTIONS

International treaties

33 | Is your country a contracting state to any international environmental treaties, or similar agreements?

The EU is a contracting state to various international environmental treaties, such as:

- the Geneva Convention on Long-range Transboundary Air Pollution (CLRTAP) and its Protocols;
- the Cartagena Biosafety Protocol to the Rio Convention on Biological Diversity and its Supplementary Protocol on Liability and Redress;
- the PIC Rotterdam Convention on Prior Informed Consent;
- the POP Stockholm Convention on Persistent Organic Pollutants;
- the Minamata Convention on Mercury;
- the Helsinki Convention on Industrial Accidents;
- the Barcelona Convention and its protocols;
- the Helsinki Convention on the Baltic Sea;
- the OSPAR Convention;
- the Bonn Agreement;
- the Lisbon Agreement;
- the Bucharest Convention on the Protection of the Black Sea Against Pollution;
- the Aarhus Convention on access to information, public participation in decision-making and access to justice in environmental matters and its Protocol on Pollutant Release and Transfer Registers;
- the Espoo Convention on Environmental Impact Assessment;
- the Alpine Convention and its protocols;
- the CBD Convention on Biological Diversity;
- the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of the Benefits arising from their Utilization;
- the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES Convention);
- the Bonn CMS Convention on the Conservation of Migratory Species;
- the Agreement on the conservation of African-Eurasian Migratory Waterbirds (AEWA-CMS);
- the Bern Convention on European Wildlife and Habitats;
- the Convention for the protection of Vertebrate Animals used for Experimental and other Scientific Purposes;
- the International Tropical Timber Agreement (ITTA);
- the Ramsar Convention on Wetlands of International Importance;
- the Agreement on the Protection and Sustainable Development of the Prespa Park Area;
- the CAMLR Convention for the Conservation of Antarctic Marine Living Resources;
- the UNCCD Convention to Combat Desertification in Africa;
- the Basel Convention on hazardous wastes;
- the Helsinki Convention on Watercourses and International Lakes;
- the Danube River Protection Convention; and
- the Convention on the Protection of the Rhine.

International treaties and regulatory policy

34 | To what extent is regulatory policy affected by these treaties?

International treaties to which the EU is a party drive the EU's regulatory policy agenda, as the EU must implement any commitments it has undertaken in this regard in a timely manner.

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UPDATE AND TRENDS

Key developments of the past year

35 | Are there any emerging trends or hot topics in environment law in your jurisdiction?

Two key developments are the EU Green Deal and the increased focus on and importance of environmental, social, and governance issues.

On 11 December 2019, the European Commission presented the European Green Deal, an ambitious agenda for the EU to become the first climate-neutral continent by 2050, while also protecting, preserving, conserving and enhancing the EU's natural capital, as well as citizens' health and wellbeing from environmental risks and impacts. The European Green Deal priorities include, inter alia, the protection of biodiversity and ecosystems, the reduction of air, water and soil pollution, and the movement towards a circular economy. In this regard, the Commission adopted a new EU Biodiversity Strategy for 2030, which forms a comprehensive, ambitious and long-term plan to protect nature and reverse the degradation of ecosystems.

In April 2021, a proposal for a Corporate Sustainability Reporting Directive was adopted, which, inter alia, extends the scope of Directive 2014/95/EU (the Non-Financial Reporting Directive) to all large companies and all companies listed on regulated markets (except listed micro-enterprises) and introduces more detailed reporting requirements on the way they operate and manage social and environmental challenges.

In the framework of the EU Green Deal, a large number of existing legal instruments will be revised. By way of example, the Commission adopted a proposal for the revision of the Industrial Emissions Directive on 5 April 2022 and the Commission is expected to adopt a proposal for the revision of the EU Ambient Air Quality Directives during the third quarter of 2022.

The EU also published a chemicals strategy for sustainability on 14 October 2020. This entails, among others, the revision of the REACH Regulation and the CLP Regulation, for which public consultations have been carried out and an impact assessment is ongoing. The Commission is to present a proposal for the revised REACH Regulation and CLP Regulation by the end of 2022.

* *The authors would like to thank Laura Neven for her contribution to the chapter.*

France

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LEGISLATION

Main environmental regulations

1 | What are the main statutes and regulations relating to the environment?

The Charter of the Environment, backed by the French Constitution, gives constitutional value to the principles of environmental law. The Environmental Code includes the main laws (article L) and the main decrees and orders (articles R and D). The provisions of general criminal law defined in the Criminal Code may come into play (such as deliberate endangerment of others or reckless killing and injury). The Civil Code now contains specific provisions on civil liability in environmental matters (articles 1246 to 1252 of the Civil Code).

Integrated pollution prevention and control

2 | Is there a system of integrated control of pollution?

French legislation includes an old system of integrated pollution control with the legislation on environmentally classified installations. The installations are specified in a nomenclature which makes it possible to determine whether the installation in question is subject to authorisation (articles L.512-1 to L.512-6 of the Environmental Code), approval (articles L.512-7 of the Environmental Code) or declaration (articles L.512-8 to L.512-13). The classification obviously depends on the sector of activity, the size of the company and the level of risk. The so-called Seveso low threshold installations are subject to additional obligations (articles L.515-32 to L.515-42). If installations subject to declaration or registration do not, in principle, present serious dangers or inconveniences, or if these dangers and inconveniences can, in principle, in view of the characteristics of the installations and their potential impact, be prevented by compliance with general requirements, installations subject to authorisation are subject to an environmental authorisation, which is a global authorisation (article L.181-1) subject to public inquiry and based on a file including an impact study. The most dangerous installations may also require a hazard study. Finally, basic nuclear installations are subject to very specific legislation.

Soil pollution

3 | What are the main characteristics of the rules applicable to soil pollution?

Polluted soils belonging to industrial operators must be remediated at the end of the operation. In accordance with article L.556-3 of the Environmental Code, in the case of an installation classified for environmental protection (L.511-1 of the same Code), this is the responsibility of the last operator and the limitation period is 30 years. In other cases, the person responsible is the producer of the waste who contributed to the origin of the soil pollution or the holder of the waste whose fault contributed to it. Finally, to ensure restoration of the soil, in the absence of an identifiable responsible party and on a subsidiary basis, the owner of the polluted land is responsible if it is shown that he or she was negligent or unrelated to this pollution. The remediation is set out in the decree of cessation of activity; different levels of remediation can be envisaged (for industrial use, for residential use, etc) with a specific procedure if a use other than industrial is envisaged. The procedure of recourse to a third party to clean up and develop is now possible.

In general, the question of soil pollution is essentially dealt with from the point of view of waste (article L.541-3 of the Environmental Code), which gives the prefect the power to order decontamination and to take the necessary measures and sanctions to impose them if necessary.

There is an obligation to provide information (article L.514-20 of the Environmental Code) for the seller of land on which there has been an installation subject to authorisation or registration. Failing this, if the pollution renders the land unfit for use, the purchaser may request cancellation within two years.

Finally, French law authorises the establishment of public utility easements on polluted sites, within a 200 metre band around the exploitation zone, which are compensated for by the operator for neighbouring owners (articles L.515-11 and L.515-12 of the Environmental Code).

Regulation of waste

4 | What types of waste are regulated and how?

There is a lot of legislation on waste. It is regulated by the provisions of article L.541-1 et seq of the Environmental Code. Waste is defined in article L.541-1-1 of the Environmental Code as any substance or object that the holder discards or intends or is required to discard. The holder is responsible for the waste until its final disposal or recovery.

There are several categories of waste and soil. Final waste can be disposed of in storage facilities.

We distinguish between ordinary waste, household waste, industrial waste, hazardous waste and waste from electronic equipment, and many channels are subject to specific regulations within the framework of EPR channels, which implement the extended responsibility of the producer in the context of the circular economy.

Once qualified, the waste must be treated. The principle of the waste treatment hierarchy of article L.541-1-1 of the Environmental Code is applied: preparation for reuse, recycling, recovery (including energy recovery) and disposal. Article L.541-4-3 sets out the conditions for a substance or object to be removed from waste status. Furthermore, the collection, transport and trade of waste are regulated and subject to administrative authorisation when it is waste presenting dangers and inconveniences (ie, hazardous waste). Mixing of waste is prohibited and the principle of proximity in waste management is a general principle.

The waste treatment facilities referred to in articles L.541-22 to L.541-30-1 are subject to authorisation after an impact study and public inquiry.

Regulation of air emissions

5 What are the main features of the rules governing air emissions?

The provisions on air pollution control are contained in article L.221-1 et seq of the Environmental Code. Article L.220-2 defines air pollution. In this matter, bodies monitor air quality and ensure that the standards set at Community level are respected. There are specific provisions on indoor air quality and planning procedures: for example, the law provides for the promulgation of atmosphere protection plans or urban travel plans at local level. There is a national plan for the reduction of atmospheric pollutant emissions (article L.222-9). The standards are defined in article R.221-1 of the Environmental Code; in particular, nitrogen oxides, PM 10 particles, PM 2.5 particles, lead, sulphur dioxide, carbon monoxide, benzene and ozone are monitored. Specific rules exist for motor vehicles, but also within the framework of legislation on classified installations.

Regarding the energy efficiency of buildings, there is a wealth of regulation in the environmental, energy and building codes. The 2020 technical regulation sets the standards. The objective is to achieve passive or even positive energy buildings. Energy saving certificates make it possible to finance the work, particularly concerning the thermal flaws of the oldest buildings, by the emitters of greenhouse gases. These rules are set out in the Energy Code.

Protection of fresh water and seawater

6 How are fresh water and seawater, and their associated land, protected?

The protection of waters is the subject of abundant legislation. Marine waters belong to the public domain of the state; watercourses belong to the fluvial public domain and some watercourses may be private.

Since the law on water No. 92-3 of 3 January 1992, the environmental code provides, in articles L.214-3 and following, a general principle of authorisation or declaration for all installations, infrastructures, works and activities leading to water withdrawals, a modification of the level or flow of water or discharges or deposits, even non-polluting. This authorisation is integrated into the environmental authorisation.

There are also provisions on the maintenance and policing of watercourses (article L.211-5-1° et seq).

There are specific provisions on marine waters and waterways open to maritime navigation to reduce pollution by discharge from ships or pollution due to exploration and exploitation operations. In addition, fishing is regulated and the pollution of watercourses affecting fish fauna is specifically punished.

Finally, specific provisions for the coastline allow it to be appropriated by the Conservatoire du littoral, and considerably limit construction not only on the seafront but also in the areas close to the shore.

Protection of natural spaces and landscapes

7 What are the main features of the rules protecting natural spaces and landscapes?

Community law applies with the definition of Natura 2000 sites and Special Protection Areas and Areas of Community Interest.

There are highly protected national parks (articles L.331-1 to L.331-6); regional nature parks, whose core is protected but whose periphery allows a certain number of activities defined by charters; classified nature reserves for those that are the most valuable and voluntary for owners who wish to protect their property; and finally marine nature parks.

In addition to this, there is legislation on classified sites for the most remarkable and on registered sites for the others, which give rise to specific protection with the intervention of the architect of the buildings of France for the delivery of authorisations that could affect these sites, with infringements.

Finally, urban planning documents must define a green and a blue grid to ensure ecological continuity and a certain number of rules relating to the protection of natural heritage.

The recent climate and resilience law No. 2021-1104 of 22 August 2021 has also introduced a rule of net zero artificialisation. In this regard, two decrees were recently published (Decree No. 2022-762 of 29 April 2022 and Decree No. 2022-763 of 29 April 2022), taken in application of article 194 of the Climate and Resilience Law. The first integrates within urban planning documents (more precisely the Regional Plan for Sustainable Development and Territorial Equality) the objective of zero net land artificialisation. As for the second decree, after article L.101-2 of the Urban Planning Code codified a definition of 'artificialisation', it answers the more precise question of how to classify a territory as artificialised or non-artificialised soil, to determine whether an urban planning document is indeed oriented towards the objective of 'zero net artificialisation'.

Protection of flora and fauna species

8 What are the main features of the rules protecting flora and fauna species?

Natural species are protected by a ban on destroying them and the habitats surrounding them if they are of scientific interest or if they are endangered as defined by the Habitats Directive (article L.411-1 of the Environmental Code). This prohibition can only be infringed by a derogation, investigated within the framework of the environmental permit when one is required, which is subject to extremely serious control by the judge and can block projects. The 2016 Biodiversity Act introduced the avoid, reduce, compensate sequence, which obliges any project likely to have an impact on spaces, protected species or not.

There are also rules for the conservation of natural habitats: Natura 2000 sites, national botanical conservatories and regional conservatories of natural areas (articles L.414-1 to L.414-11). Zones of ecological, faunistic and floristic interest have been set up, which require a certain level of protection. The Code prohibits the introduction of invasive species and more generally those likely to harm the environment, fauna and flora (article L.411-5).

Lastly, hunting is subject to numerous provisions that are very lax compared to other European countries.

Noise, odours and vibrations

9 What are the main features of the rules governing noise, odours and vibrations?

Noisy activities are regulated according to the type of activity or infrastructure (road, rail, aeronautics, etc). In principle, no activity may produce a noise emission greater than 2 dB compared to the previous situation, with limits of 65 dB during the day and 60 dB at night. To comply with this standard, the mayor or the prefect has the power to intervene and force noisy activities to reduce the level of noise. In addition, article R. 1336-5 of the Health Code punishes neighbourhood noise (ie, any particular noise that is detrimental, in a public or private place, to the tranquillity of the neighbourhood or to human health because of its duration, repetition or intensity).

There are no specific regulations on odours, but within the framework of legislation on classified installations it is possible to regulate odour nuisances. The question of vibrations is regulated by the regulations concerning equipment and certain types of activities within the framework of the environmental permit. As a reminder, this environmental authorisation, codified in the Environmental Code by Order No. 2017-80 of 26 January 2017, brings together within it the procedures of various

previous authorisations (IOTA declaration under article L.214-3, ICPE registration or declaration under article L.512-7 or L.512-8, etc).

Liability for damage to the environment

10 | Is there a general regime on liability for environmental damage?

Environmental liability is a general principle of French law, and the polluter-pays principle is included in the Environmental Charter. The legal regime is specified in the case of the application of the Directive of 1 August 2008 in article L.160-1 et seq of the Environmental Code. Damage caused to the environment is compensated in the event of serious harm to human health due to soil contamination, serious impairment of the chemical or quantitative ecological state and ecological potential of water, impairment of the maintenance or restoration to a favourable conservation status of protected species and impairment of ecological services. Ecological damage is repaired in kind by the operator based on a prefectoral order that makes the operator responsible for preventing and repairing the damage. This text only concerns the operators of classified installations and not private individuals.

Moreover, ecological damage caused to private individuals by any polluter may be compensated based on the provisions of article 1249 of the Civil Code, which recalls that compensation for ecological damage is made primarily in kind, but that the person responsible may be ordered to pay damages allocated to the repair of the environment.

Environmental taxes

11 | Is there any type of environmental tax?

Environmental taxes are relatively low in France. There is a general tax on polluting activities defined in article L.151-1 of the Code, which refers to articles 266-sexies to 266-terdecies and 285-sexies of the Customs Code. Several general taxes on polluting activities exist, concerning waste (hazardous or non-hazardous) and certain polluting emissions. It must be paid by companies.

Environmental reporting

12 | Are there any notable environmental reporting requirements (eg, regarding emissions, energy consumption or related environmental, social and governance (ESG) reporting obligations)?

Since Law No. 2015-992 of 17 August 2015 on the energy transition for green growth, in particular its article 173, listed and non-listed companies exceeding a certain threshold are required to publish extra-financial information on their impact on the environment. Article R.225-105 of the Commercial Code provides for the publication of information concerning the resources devoted to measures to prevent, reduce or remedy discharges into the air, water and soil, the measures taken to improve energy efficiency and the use of renewable energies, and, with regard to climate change, the significant greenhouse gas emissions generated by the company's activities. The Corporate Sustainability Reporting Directive should soon extend these requirements to all companies with more than 250 employees and improve the content of non-financial reports.

Government policy

13 | How would you describe the general government policy for environmental issues? How are environmental policy objectives influencing the legislative agenda?

The government communicates a lot about its environmental and climate policy. Many laws have been passed in recent years (two climate laws, a law on the circular economy, a law on land use planning, a law on sustainable food, etc).

However, the stated objectives are generally not achieved. This is the case for the climate, since the objectives set by the national low-carbon strategy have not been met, and the commitment on the withdrawal of glyphosate has not been kept. In addition, many specific regulatory measures are inconsistently embedded in the overall policy.

HAZARDOUS ACTIVITIES AND SUBSTANCES

Regulation of hazardous activities

14 | Are there specific rules governing hazardous activities?

There are special regulations for classified facilities likely to cause major accidents involving hazardous substances. These are the so-called Seveso high-low threshold facilities, whose authorisations are subject to hazard studies. The authorisation must be accompanied by an organisation plan in the case of a major risk. These installations may give rise to the implementation of public utility easements, in the vicinity and the establishment of a technological risk prevention plan which defines a lethality zone and a morbidity zone around the dangerous installation. Special precautions must be taken and the expropriation of people living in the lethality zone is possible.

Regulation of hazardous products and substances

15 | What are the main features of the rules governing hazardous products and substances?

Within the EU framework of REACH and CLP, there are legislation and regulations on biocidal chemicals and nanoparticles. In addition to a permanent obligation to provide information on the evolution of knowledge on the impact of the substance on human health and the environment, which is the responsibility of manufacturers and importers, the latter are obliged to provide technical files and to inform the public authorities of any difficulties. Moreover, article L.521-6 of the Environmental Code authorises ministers to prohibit the manufacture, import, export, placing on the market or possession, or order the withdrawal or recall, of products or impose requirements when there are serious dangers or uncontrolled risks. The nature of dangerous substances is defined in the Community framework and by article 1342 of the Public Health Code.

The criminal provisions are quite serious, as are the administrative sanctions, which allow for a ban in the event of non-compliance with a formal notice.

Finally, there is specific legislation for biocidal products subject to a specific marketing authorisation (articles L.522-1 to L.522-19).

Industrial accidents

16 | What are the regulatory requirements regarding the prevention of industrial accidents?

There are internal rules to prevent accidents in the workplace, based on the Labour Code. However, workers are indeed the first victims in the event of a serious accident, which is why the most dangerous installations are subject to a series of plans: an internal organisation plan, and a protection plan against technological risks. The first is a plan drawn up by the company but submitted to the state. The second is drawn up by the state. It is achieved primarily through the development of a plan for the prevention of technological risks in the vicinity of the industrial site (articles L.515-15 et seq. of the Environmental Code). This concerns Seveso high-threshold industrial sites. These plans are then annexed to the local town planning plan, so that they can be directly opposed to third parties.

ENVIRONMENTAL ASPECTS IN TRANSACTIONS AND PUBLIC PROCUREMENT

Environmental aspects in M&A transactions

17 | What are the main environmental aspects to consider in M&A transactions?

Whether it is a merger, an acquisition of shares or the acquisition of a company's assets, the costly issue of polluted sites and soil must be resolved. As the debtor of the remediation obligation is the last operator of the facility, the acquiring company may be subject to it as soon as it takes over the activity. In the case of a merger, the acquiring company must verify the absence of environmental criminal offences, as following a decision of the Court of Cassation (Crim, 25 November 2020, No. 18-86.955), it may be declared criminally liable for offences previously committed by the acquired company.

Environmental aspects in other transactions

18 | What are the main environmental aspects to consider in other transactions?

In all of these situations, the most important issue concerns the question of polluted sites and soils. Indeed, the debtor of the remediation obligation is the last operator of the activity. If in the case of a real estate transaction the purchaser is not in principle subject to the remediation obligation, the situation is different as soon as he or she resumes the activity. The same principle applies to corporate reorganisations and bankruptcy proceedings.

Environmental aspects in public procurement

19 | Is environmental protection taken into consideration by public procurement regulations?

The Public Procurement Code has always provided that the nature and scope of the needs were determined by considering the objectives of sustainable development in their economic, social and environmental dimensions. However, the law of 22 August 2021, which combats climate change, marks a new stage in the greening of public procurement by creating an article L.3-1 of the Public Procurement Code: 'Public procurement contributes to achieving sustainable development objectives, in their economic, social and environmental dimensions, under the conditions defined by this code', but above all, by creating new obligations such as taking the environment into account in the selection criteria for bids and in the contract clauses. What was a simple option for the buyer becomes a legal obligation. Decree No. 2022-767 of 2 May 2022, containing various amendments to the Public Order Code, introduces the use of an award criterion that takes into account the environmental characteristics of bids (articles L.2152-7 and L.3124-5 of the Public Order Code).

ENVIRONMENTAL ASSESSMENT

Activities subject to environmental assessment

20 | Which types of activities are subject to environmental assessment?

Many projects are subject to environmental assessment. Article R.122-2 of the Environmental Code and its appendix specify which projects are subject to such an assessment, either systematically or after a case-by-case examination. These projects include: installations classified for environmental protection (L.511-1 et seq. of the same code), installations, works and activities impacting water (L.214-3 et seq.), certain development projects, transport infrastructures, etc.

When the project is subject to environmental authorisation, the environmental assessment is issued as part of the authorisation procedure.

Environmental assessment process

21 | What are the main steps of the environmental assessment process?

The environmental assessment procedure is based on a file provided that can be the subject of a certificate from Project Rouen which indicates the decision regimes and procedures for a term to intervene (article L.181-6 of the Environmental Code). The file includes, in addition to the usual elements, and in particular concerning the activity, the installation or work with its supplication monitoring, an impact study with updated maps and a non-technical presentation note. The file is first submitted to a public inquiry phase and then a decision phase. The file must obviously comply with local planning regulations. The public inquiry lasts for at least one month and the investigating commissioner or commission of inquiry has one month to give its opinion. Any member of the public who wishes to do so may make observations during the public inquiry.

REGULATORY AUTHORITIES

Regulatory authorities

22 | Which authorities are responsible for the environment and what is the scope of each regulator's authority?

As a general rule, the authority responsible for the environment is the prefect and the services of the regional directorate for the environment, development and housing. It is the prefect who issues environmental authorisations, classified installation authorisations, etc. It is also up to the state, and therefore the prefect, to impose administrative sanctions where necessary and to refer cases to the public prosecutor if violations are committed. However, victims may also file a complaint with the public prosecutor if they have suffered damage. The minister remains the hierarchical superior of the prefect and can therefore be seized; in certain cases, authorisations are issued directly at ministerial level, particularly when they concern the entire territory, such as product authorisations.

However, other authorities may also have to intervene: mayors have jurisdiction over building permits, local nuisances, town planning and waste. Other bodies, such as the Office National de l'Eau et des Milieux Aquatiques, are involved in monitoring the environment and preventing damage, and can record offences; the French Office for Biodiversity protects biodiversity, manages protected areas and has officials who can also record offences.

Investigation

23 | What are the typical steps in an investigation?

Numerous administrative agents, if they are officers of the judicial police, can note environmental offences and refer them to the public prosecutor. The inspectors of classified installations in charge of controlling industrial operations can come to all sites to carry out inspections and, in the event of non-compliance with the rules of the authorisation or approval, send a report followed by an official statement of offence which can lead to a formal notice. If the formal notice is not complied with, it is an offence; moreover, the prefect then has the legal means to directly impose the carrying out of the necessary work and to suspend the operation of the installation.

Administrative decisions

24 | What is the procedure for making administrative decisions?

In the case of classified installations, the procedure is adversarial. The draft order is notified to the petitioner, who may make observations. The same applies to the reports of the inspectors of classified installations.

As a rule, individual decisions must be reasoned. Decisions can always be appealed within two months, as a general rule, from the date of notification for the operator. To contest the decision, the operator may use all legal means, including studies that they have commissioned, their own analyses, etc.

Sanctions and remedies

25 | What are the sanctions and remedies that may be imposed by the regulator for violations?

The range of administrative sanctions is extremely broad. When the operator of an installation does not comply with an obligation, they receive a formal notice with a deadline for compliance. If the deadline is not met, the prefect may proceed ex officio and at the operator's expense with the work, they may oblige the operator to deposit a sum corresponding to the amount of the work to be carried out, suspend the operation of the installations and order the payment of a fine, which may be as high as €15,000 (article L.171-8). All this is of course independent of the penal sanctions that can be pronounced.

Appeal of regulators' decisions

26 | To what extent may decisions of the regulators be appealed, and to whom?

Any administrative decision can be challenged by a person with an interest. This may of course be the operator if the decision is unfavourable to them; the operator may also challenge it partially. However, neighbours or environmental protection associations can also appeal to the administrative court within two or four months, depending on the decision. The judge has full contentious power (ie, he or she can not only annul the decision or confirm it, but can also substitute an amending decision for the one that has been taken). The appeal is possible before the administrative court of appeal within two months of the judgment.

JUDICIAL PROCEEDINGS

Judicial proceedings

27 | Are environmental law proceedings in court civil, criminal or both?

In environmental matters, proceedings may be administrative if the aim is to challenge decisions or to request compensation for the damage caused by these decisions, or even when the regime for compensation for ecological damage defined by the Environmental Code is involved. The procedures can also be civil and criminal. They are civil when it is a question of classic or contractual tort liability and ecological damage based on the Civil Code. They are penal when it is a question of offences covered by the environmental code or even offences covered by the penal code when there is harm to persons, deliberate endangerment, poisoning, forgery, etc.

In criminal matters, since Law No. 2020-1672 of 24 December 2020 relating to the European Public Prosecutor's Office, environmental justice and specialised criminal justice, specialised chambers in environmental criminal law have been created. In addition, this same law has expanded the field of judicial agreements of public interest, which allow the prosecutor's office to conclude agreements with companies, which, in return for the payment of a fine and the obligation to regularise their situation and repair the environmental damage committed, can avoid going to trial.

Powers of courts

28 | What are the powers of courts in relation to infringements of environmental law?

The courts have the most extensive powers since they can stop an operation (administrative jurisdiction), order the restoration of polluted sites, impose heavy compensation, order work to be carried out under penalty, and finally sentence natural and legal persons to imprisonment and fines for the former, but also to other sanctions such as a ban on participating in public contracts.

Civil claims

29 | Are civil claims allowed regarding infringements of environmental law?

Civil actions are possible; on the one hand, all authorisations issued in France are subject to the rights of third parties, which makes it possible to conduct both administrative and judicial proceedings. Contractual actions are of course possible, and compensation for ecological damage in the event of infringement is possible on the basis of the provisions of article 1249 of the Civil Code. To date, the courts have made little use of this remedy.

Defences and indemnities

30 | What defences or indemnities are available?

The responsibility is mainly on the operator of a classified installation when it is an activity, but it can also reach the owner of land. It concerns the producer, importer and professional users of products. When there are several possible responsible parties, the responsibility can be joint or joint and several, depending on the case at the discretion of the court. In criminal matters, the limitation period is 10 years in terms of crime, six in terms of misdemeanour, or one in terms of contravention. In civil matters, the time limits vary, but the limitation period for financial compensation for classified installations is 10 years.

Directors' or officers' defences

31 | Are there specific defences in the case of directors' or officers' liability?

In criminal matters, the question arises of the delegation of power from managers to officials who are capable of effectively performing their duties. The existence of a delegation of authority can be an effective defence. Soft law has an increasing place in French jurisprudence and the fact that an internal rule has been disregarded may not be sufficient to exclude the liability of the legal person (*Erika* decision, Court of Cassation, 25 September 2012). The fact of having respected the compliance rules may be an important element, especially as in French law the intentional element of the offence is generally required.

Appeal process

32 | What is the appeal process from trials?

Civil and criminal decisions of first instance are all subject to appeal to the courts of appeal. Appeals against judgments handed down by the courts of appeal are themselves subject to appeal to the Court of Cassation, but this is not really a third level of jurisdiction insofar as the Court of Cassation does not interfere in the assessment of the facts, which is the responsibility of the trial judge. Moreover, there is a very strict lock before the Court of Cassation, which admits relatively few appeals.

INTERNATIONAL TREATIES AND INSTITUTIONS

International treaties

33 | Is your country a contracting state to any international environmental treaties, or similar agreements?

France belongs to the European area and consequently, it must respect all the European legislation under the control of the Court of Justice of the European Union. With regard to environmental conventions, the Espoo Convention on Environmental Impact Assessment in a Transboundary Context of 25 February 1991 and the Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters of 25 June 1998 and certain territorial conventions concerning the Rhine or the Alps, for example, are also applicable. Finally, the European Convention on Human Rights, due to the development of the case law of the European Court of Human Rights on the environment, obviously plays a significant role.

International treaties and regulatory policy

34 | To what extent is regulatory policy affected by these treaties?

In French law, article 55 of the Constitution gives duly ratified treaties a higher value than the law. Consequently, in the event of a contradiction between a law and, a fortiori, a regulation and an international convention, the latter takes precedence. However, the Constitutional Council considers that it has not checked the conformity of laws with international conventions.

UPDATE AND TRENDS

Key developments of the past year

35 | Are there any emerging trends or hot topics in environment law in your jurisdiction?

We note a growing intransigence of jurisprudence with regard to pollution; the Council of State made a series of very important decisions in the fight against climate change (Grande-Synthe, 1 July 2021) but also in the fight against air pollution by condemning the French state to pay €10 million for not having conformed to a decision of justice obliging it to reduce the emissions of nitrogen dioxide and fine particles. The Constitutional Council, for its part, in a decision of 20 January 2020, recognised the possibility of infringing the freedom of trade and industry to protect the right to life.

With regard to environmental criminal law, it may be noted that, for the first time, a judicial court has taken up the public interest judicial agreements resulting from the Sapin II law of 2016 and then extended to environmental matters by Law No. 2020-1672 of 24 December 2020 relating to the European Public Prosecutor's Office, to environmental justice and to specialised criminal justice. Three agreements were thus negotiated and concluded between the public prosecutor's office and companies acknowledging that they had committed criminal acts (pollution of a watercourse).

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LEGISLATION

Main environmental regulations

1 | What are the main statutes and regulations relating to the environment?

Environmental legislation in Germany is mostly determined either by directly applicable EU regulations (eg, on chemicals, waste shipments or food contact materials) or EU directives requiring national implementation, such as most product, nature conservation or water quality regulations. This is to avoid 'environmental dumping' across the European Union (ie, production relocation in EU member states with less environmental enforcement).

German Constitution

Environmental protection has been set out in the Constitution as a government objective since 1994. Environmental protection rights, however, cannot directly be derived from the Constitution, but only from the relevant environmental laws. The adoption of a comprehensive and uniform Environmental Code failed in 2009 and has not been pursued further since. As a result, industrial operators are subject to the relevant EU, federal, state and sometimes local regulations.

German Climate Protection Act

The German Climate Protection Act, which provided for a bundle of measures to reduce Germany's GHG emissions (among them a national emissions trading system for fuels used in transport and domestic heating as of 2021), has been substantially changed in 2021 due to a landmark decision of the Federal German Constitutional Court. This ruling requires the legislator to anticipate, to some extent, in its climate-related regulations the fundamental rights of future generations. Now GHG neutrality already by 2045 is enshrined in the Act and the overall 2030 climate target was reduced to at least 65 per cent below the emissions of 1990. From 2050 negative emissions are pursued.

All sectors (eg, traffic or industry) are now assigned a fixed saving target to be reached and fixed amounts of annual CO_2 emissions. Under the Act, each ministry decides on measures to achieve the required reductions. The Act is flanked by the 2022 German Immediate Action Program with €8 billion for coal-free industrial activities, green hydrogen and green steel, as well as energy-focused building refurbishments and climate-friendly traffic.

German environmental regulations

German environmental regulations primarily concern all types of emissions (hazardous environmental impacts such as air emissions, noise, odour, vibrations), requirements of environmental impact assessment and free access to environmental information, a widely ramified waste regulation (also covering extended producer responsibility (EPR)), soil and water protection, nature protection (including protected species and habitats, individual animals and protected areas) a well as hazardous substances and occupational protection. Other legislative acts (eg, on the permitting and operation of infrastructures, (renewable) energy projects and other installations including projects subject to the mining laws) contain or refer to environmental procedural and material requirements.

Integrated pollution prevention and control

2 | Is there a system of integrated control of pollution?

There is a system of integrated control of pollution regarding industrial and other activities that are prone to cause environmental impacts subject to permits under the Emissions Control Act; for complex infrastructure projects of all types (road, rail, waterways, harbour or mining installations, high-voltage electricity lines) the related issues are dealt with in the plan approval. These permits and plan approvals are 'integrated', meaning that they generally regulate all environmental concerns in one decision.

Soil pollution

3 | What are the main characteristics of the rules applicable to soil pollution?

Liability

The Federal Soil Protection Act provides for liability for hazardous soil changes, historic and suspected soil pollution and groundwater contamination caused by soil pollution. The following parties are liable: the polluter; the owner and (under certain conditions) the former owner of the site; and the tenant. In exceptional cases, a shareholder of the owning company can be liable (eg, malicious undercapitalisation). The liability of the listed parties is joint and several and regardless of their contribution to (suspected) contamination to avoid the taxpayer having to assume such costs. The authorities select at their lawful discretion the liable party and the measures that must be taken, usually at the liable party's expense. Site owners are often held liable to ensure efficient and fast action (deep pocket principle).

Measures

Measures such as investigation, remediation or containment may be limited by the permissible use of the site, proportionality or the value of the site after decontamination. In Germany, thresholds for contaminants are regulated by an ordinance, environmental guidelines and standards. The applicable limits are, therefore, often subject to compromise with the authorities and made subject to remediation agreements determining measures, objectives and deadlines.

The Federal Soil Protection Ordinance sets out testing requirements and limit values. A broadly amended and updated version will enter into force on 1 August 2023.

Regulation of waste

4 | What types of waste are regulated and how?

Waste

'Waste' is all substances and objects that their owner discards, intends to discard or is obliged to discard. 'Discarding' means that the owner has lost interest in the material, disposes of it or leaves it to third parties (eg, municipal waste collections or recyclers) for recovery or disposal, such as incineration plants or recycling facilities. 'Compulsory waste' is any substance or object that is no longer used for its original purpose and is proven to be an environmental hazard and must therefore be disposed of.

Waste hierarchy

The Circular Economy Act (CEA), being the successor of the Waste Management Act, sets out the main provisions on waste handling, prevention, preparation for reuse, recycling and disposal as well as extended producer responsibility (EPR). According to the 'waste hierarchy', the reuse or recycling of waste is more desirable than its disposal. 'Recycling' includes the preparation or processing of waste with the objective of reuse for its previous purpose (substance recovery) or a new purpose (eg, energetic recovery) excluding waste used as a combustible or filling material. Hence, the CEA requires that recycling is promoted and includes an obligation to collect different types of waste separately (paper, glass, (plastic) packaging, biowaste, batteries, electr(on)ical equipment, etc). As Germany is not rich in resources such as metals or rare earths, emphasis is placed on the recovery of valuable materials and resources. Waste disposal must be done in a safe and environmentally sound way (either by incineration in an approved installation or a landfill site after having been pre-processed) and must be comprehensively documented.

Extended producer responsibility (EPR)

Following the EU Circular Economy Package, which entailed legal amendments of the EU Waste Framework and the landfill, waste electrical and electronic equipment, end-of-life vehicles, batteries and packaging Directives, inter alia, the CEA was substantially amended. It introduced more far-reaching EPR obligations of producers, compliance of end-of-waste products with the chemicals and product laws and a care obligation to avoid planned obsolescence and destruction of new products as well as separation obligations regarding different types of waste and increased quotes for reuse and recycling.

Regulation of air emissions

5 | What are the main features of the rules governing air emissions?

Emissions control regulations

The reduction of air pollution is one of the EU's main objectives. In Germany, rules and thresholds for air emissions of industrial installations or other emissions sources are regulated in the Federal Emissions Control Act, specific ordinances and the Technical Instruction on Air Pollution. Thresholds for nitrogen oxide and particulate matter apply to city traffic (eg, PM10: 50 µg/m^3 daily limit value not to be exceeded more than 35 times per year; 40 µg/m^3 average annual limit value).

Technical instruction air pollution

In December 2021, the revised Technical instruction air pollution (TA Luft) entered into force. It covers more plants (eg, for biomass, wood pellets, andshredders), new or reclassified substances (eg, dioxins; furans; carcinogenic, mutagenic and reprotoxic substances; dust; ammonium) and now refers to the best available techniques (BAT).

Driving bans

In June 2021, the ECJ held that Germany had failed to take suitable measures to reach compliance with the NO_2 air emissions thresholds of the EU Air Quality Directive in a large number of German cities. This was in particular due to old diesel cars that had manipulated exhaust air switch-off devices ('diesel scandal'). Since then, many cities have introduced driving bans for older cars and defined 30 km zones. The German government has incentivised the purchase of cars with lower emissions. Covid-19 and the consequent reduction in mobility finally contributed to a steady decrease in the NO_2 concentration. As a result, the thresholds are now complied with in Germany. Emissions of particulate matter are also clearly decreasing.

Industrial installations

Certain industrial installations (among them large combustion plants) are, based on the EU Industrial Emissions Directive (current consolidated version of 6 January 2011), under a continuous obligation to be adjusted based on the BAT, subject to regular monitoring by the authorities and publication of the results.

Buildings

Buildings have to comply with ever stricter energy efficiency requirements. These also apply to modernisation measures.

Protection of fresh water and seawater

6 | How are fresh water and seawater, and their associated land, protected?

The Water Management Act requires the sustainable management of bodies of water. The use of water (ie, its withdrawal or discharge) requires a permit and is charged to incentivise water conservation. The discharge of wastewater and other substances into bodies of water or sewage systems is heavily regulated. For instance, the Groundwater Regulation specifies criteria to control the amounts of nitrates in groundwater. In 2018, the European Court of Justice condemned Germany because of its failure to reduce groundwater pollution from nitrates and the European Commission sent a warning letter to Germany to increase its efforts to reduce nitrate levels in groundwater. Enforcement by the European Commission could ultimately be averted due to further amendments of the Act on Fertilisers in 2020. Nevertheless, in 2020, exceedances were still detected at 27 per cent of the measuring points. In 2021, for example, the allowed use of fertilisers in 'red areas' (those with a high level of nitrate contamination) must mandatorily be reduced by 20 per cent, and restrictions on the use of fertilisers in autumn and winter and the distances to protected waters were increased. Further restrictions will apply as of 2025.

Key issues

The interpretation of water laws (eg, the EU Water Framework Directive's 'good status' standard and the maintenance of water standards, current consolidated version of 20 November 2014) and their implementation into German law are currently the 'environmental highlights' and key challenges in industrial and infrastructure projects. One issue is whether the quality of groundwater has deteriorated if only one substance threshold has been exceeded or how to handle already exceeded thresholds. The latter would hinder any new projects in bodies of water that do not meet the required threshold.

Protection of natural spaces and landscapes

7 | What are the main features of the rules protecting natural spaces and landscapes?

The requirements for natural spaces and landscapes are regulated by the Federal Nature Protection Act and ordinances of the German states specifically regulating protected areas and the applicable rules and prohibitions. Issues of energy supply since the war in Ukraine have led the government to adopt regulations and guidelines to permit important infrastructures more easily in natural spaces and landscapes – even at the price of affecting natural spaces and landscapes.

Protection of flora and fauna species

8 | What are the main features of the rules protecting flora and fauna species?

The protection of flora and fauna species is regulated in two ways. First, certain habitat types and species are protected within specific areas called Flora-Fauna-Habitat areas or Natura 2000 sites (based on the EU Conservation of Natural Habitats and Wild Fauna and Flora Directive and the EU Conservation of Wild Birds Directive). Second, protected species are protected as individuals against impairments (eg, killing, impacts on reproduction, breeding and migration), as regulated in the Nature Protection Act and pertinent Ordinances. Natura 2000, however, is the biggest challenge for all types of projects.

To promote the permitting of more wind farms (which decreased steeply in 2020 and 2021) the regulator has announced federal standards on the assessment of the killing and disturbance risk for birds by wind turbines ('test of significance') and numerous changes in the Nature Protection Act (2022). This is part of the 'Easter Package' aiming at accelerated permitting of important infrastructures, including renewable energy projects, even where protected species or protected areas (including Natura 2000 sites) may be affected.

Natura 2000

The 5,266 German Natura 2000 sites cover more than 15.4 per cent of Germany's land area and almost half of its marine area. If a project is planned near a Natura 2000 site, the relevant environmental authority must assess whether the project could have adverse effects on the site. The project developer must generally provide a comprehensive inventory of relevant habitats and species, (inter)relations and (expert) documentation for such projects. Natura 2000 has therefore been an effective instrument for environmental NGOs who want to challenge and delay infrastructure, industrial and energy projects. For example, the approval for the German motorway section of the German-centric Hessisch Lichtenau – ultimately connecting the Polish and Benelux states' motorways – took more than 15 years owing to three court procedures based mainly on non-compliance with Natura 2000-related issues.

Noise, odours and vibrations

9 | What are the main features of the rules governing noise, odours and vibrations?

The basic legislation for noise, odour or vibration emissions is the Federal Emissions Control Act. It addresses emissions of all types of (industrial) installations (including, for example, animal-breeding facilities), but also includes regulations for transport carriers (routes) and vehicles. Ordinances, administrative provisions or technical guidelines supplement the Act, such as, in particular, the Technical Instruction on noise protection with limit values, parameters for the calculation of noise and noise measurement procedures. The former Administrative Provisions on odour emissions (known as GIRL) have now been integrated with the Technical Instruction on Air Pollution (TA Luft). Vibrations are regulated by technical norms regarding the protection of humans in buildings and for the prevention of building damage.

Basic rules

There is no general regulation for protection against traffic noise, but noise abatement is based on various approaches and regulations for noise from roads, railroads or aircraft. As a rule, noise is calculated, not measured. However, the implementation of the EU Environmental Noise Directive takes a different, comprehensive approach to noise caused by distinct sources. Noise limits are specifically set in permits for industrial plants or planning approvals for infrastructure projects, as well as in zoning plans and building permits.

Liability for damage to the environment

10 | Is there a general regime on liability for environmental damage?

The Environmental Damage Act is based on the 'polluter pays' principle and gives incentives to operators to adopt measures and develop practices to minimise the risk of environmental damage. Environmental damage is defined as damage to habitats and species (biodiversity damage), surface or groundwater, or soil. It depends on specific occupational activities listed in the Annex and applies regardless of fault if a causal link can be established between activity and damage. For activities not listed, the liability relates to biodiversity damage only and the responsible party must have acted with intent or negligence. As Germany has specific regulations on soil and water contamination, the Environmental Damage Act is mainly relevant for biodiversity damage. It has been completely revised in 2021 to implement data collection and reporting requirements of the German state(s) under article 3 of Regulation EU 2019/1010, a recent ruling of the ECJ clarifying the scope (case C-297/19 of 9 July 2020, relating to Annex I (3) second indent of Directive 2004/35/EG) and to end an infringement procedure of the European Commission ((2020/2108 – C(2020) 1465 final) relating to article 12(1) 1 of Directive 2004/35/EG).

Environmental taxes

11 | Is there any type of environmental tax?

Environmental taxes are designed to incentivise a scarcer use of natural resources. In 2021, environmental taxes in Germany amounted to €53.8 billion, which is the lowest since 2003 (€57.1 billion). Germany has one of the lowest environmental taxes (3.7 per cent) against an average of 5.42 per cent in the EU. The environmental taxes include energy tax, taxes on electricity and vehicle taxes (admission and annual taxes for vehicles). Further tax revenues are generated in other sectors, such as the toll for heavy vehicles on motorways and the national emissions trading system for fuels for car traffic and domestic heat (€7.4 billion in revenue 2021). In addition, the EU environmental technologies fund generates revenues (€5.1 billion in 2021). There are also charges, for example, for certain public services (waste and wastewater treatment), the use of resources (the industrial abstraction of groundwater for cooling purposes) and plastic bags in shops.

Environmental reporting

12 | Are there any notable environmental reporting requirements (eg, regarding emissions, energy consumption or related environmental, social and governance (ESG) reporting obligations)?

Emissions reporting

There are numerous reporting obligations relating to air emissions, especially for plants subject to the Industrial Emissions Directive.

Germany, like all other EU member states, must annually submit figures not only for 'classical' emissions (CO_2, NO_x, SO_2, particulate matter), heavy metals and persistent organic pollutants (POPs), but also a breakdown of these emissions generated by industry sectors.

ESG

On the corporate level, EU law requires large companies to disclose information on their operation and management of social and environmental challenges (including respect for human rights, anti-corruption and bribery and diversity information according to the Non-Financial Reporting Directive 2014/95/EU (NFRD)). The reports are a basis for the general public as well as for investors or regulators to evaluate the non-financial performance of these companies and encourage them to develop a responsible approach to business.

The Corporate Sustainability Reporting Directive significantly extends and strengthens current sustainability reporting requirements and the scope of application, and requires more detailed and audited information. The European Financial Reporting Group will publish general standards in early summer 2023 and sector-specific standards in mid-2024. The information provided by companies will need to be independently audited and certified by an accredited independent auditor or certifier, just like financial information The reporting will apply from January 2024 to companies already in the scope of the NFRD. For companies newly subject to the Directive, the reporting requirements will apply from January 2025, and for listed SMEs from January 2026. Companies will further have to digitally tag information to a publicly accessible website. Because the legislation is adopted as a Directive, national implementation will be necessary.

Government policy

13 | How would you describe the general government policy for environmental issues? How are environmental policy objectives influencing the legislative agenda?

Environmental issues are beginning to permeate all sectors and are very much on the political agenda because the Green party is one of the coalition partners in government (the traffic light). Actual events are one reason: the covid pandemic and the war in Ukraine, with the linked energy (supply) issues, as well as the recent severe floods in Germany, forest fires, infestations by parasites, propagation of invasive species and other visible or palpable effects of the advancing climate change. On the other hand, legal developments such as the Paris Agreement and the European Green Deal require political and regulatory action. Ultimately, the future steady supply of energy from (renewable or other) energy sources is a heavily debated factor. As a result, environmental issues are receiving increased attention from the general public.

HAZARDOUS ACTIVITIES AND SUBSTANCES

Regulation of hazardous activities

14 | Are there specific rules governing hazardous activities?

Hazardous activities are not a category under German law, but rather the operation of (industrial) installations or projects (including underground activities) that can potentially cause environmental risks or nuisances for nearby residents or the general public. Such installations usually require a permit under the Emissions Control Act or the Mining Act. The main activities under the Emissions Control Act, inter alia, relate to generation of electricity, processing of steel, quarries, production of chemical products, food, mineral oil refining, storage of certain substances or waste processing above certain thresholds.

Regulation of hazardous products and substances

15 | What are the main features of the rules governing hazardous products and substances?

Dangerous chemicals are, inter alia, subject to the EU Regulation on Registration, Evaluation and Authorisation of Chemicals (current consolidated version of 20 April 2020) establishing the principle 'no data, no market'. That is, chemicals must not be placed on the EU market before they have been registered with the European Chemicals Agency after a comprehensive assessment of substance properties (technical dossier) and impacts (chemical safety report) to be provided by the companies producing or marketing such substances.

Substances of very high concern are to be replaced in the long term because of their hazardous features. They are listed in Annex XIV (Authorisation) with a sunset date for their marketing. Any longer use requires an application for authorisation well before the sunset date. Annex XVII (Restriction) contains conditions for or prohibition of the manufacture, use or marketing of certain substances owing to unacceptable risks to human health or the environment caused by such substances. Further, comprehensive information requirements apply in both cases.

The German Ordinance on Hazardous Substances largely refers to the EU REACH regulation and was recently amended to fully implement the Biocidal Products Regulation (EU) No. 528/2012.

Industrial accidents

16 | What are the regulatory requirements regarding the prevention of industrial accidents?

Installations particularly prone to hazards to human health and environmental damage (Seveso installations) are subject to specific organisational and action obligations considering various scenarios and reporting obligations. For these installations, comprehensive information sharing with the authority and the public must be set up before and after any incident or accident. A regular issue with these installations or the neighbouring buildings and uses is the distance requirements that must be observed.

ENVIRONMENTAL ASPECTS IN TRANSACTIONS AND PUBLIC PROCUREMENT

Environmental aspects in M&A transactions

17 | What are the main environmental aspects to consider in M&A transactions?

Emissions

Environmental aspects in M&A transactions vary corresponding to the business activity of the target company. For industrial installations, emissions (air, noise) regularly play a key role, especially for installations with greater environmental impact (being subject to the EU Industrial Emissions Directive), which must be adapted to the best available techniques regularly and are inspected repeatedly by the authorities. Here, any backlog or issue may become expensive for a purchaser. Also, the allocation of emissions allowances under the European Emissions Trading System in the new trading period (starting 2021) and possible challenges of the allocation decisions are worth considering given the rising value of the certificates.

Contamination

Soil and groundwater contamination liability is a regular issue, especially at older industrial sites. In this case, besides liability, subsidies may also be taken into account.

Energy, water and other supplies

Energy generation and costs and the availability and use of water have become important issues with the phasing out of nuclear and coal-generated energy and less water being available due to the summer droughts and the sophisticated legal requirements. Since the covid pandemic and the war in Ukraine, energy (and other) supplies have become an issue and are often subject to dispute on force majeure clauses. Although the nuclear phase-out is currently being questioned and some of the coal-fired power plants in reserve may be put into operation to bridge energy shortages the general issues of energy, water and other supplies will become ever more important. In June 2022, the alarm (second) phase of the national gas supply plan was declared, which allows supporting governmental measures. In the emergency (third) phase the government is entitled to take measures to allocate, ship or save gas Germany-wide, which would affect industrial productivity.

Environmental aspects in other transactions

18 | What are the main environmental aspects to consider in other transactions?

The environmental aspects depend on the business or activities concerned. In financings of industrial installations often the validity and enforceability of permits are key. In real estate transactions, soil and building contamination is a regular issue as well as, increasingly, questions of energy supply and generation (renewable energies) and energy-efficiency requirements. Bankruptcy proceedings may affect existing permits because the operator is no longer able to guarantee financial compliance with the environmental obligations.

Environmental aspects in public procurement

19 | Is environmental protection taken into consideration by public procurement regulations?

The public procurement regulations allow for the inclusion of environmental aspects at all stages of the procurement procedure: the awarding authority can already, when selecting the contract object, choose an environmentally friendly alternative or incorporate environmental requirements as technical specifications. As a bidder qualification, certain standards for environmental management can be required to the extent relevant for the performance of the contract. Moreover, environmental criteria can be included in the tender evaluation as award criteria or, ultimately, in the conditions for contract performance (eg, regarding the way and manner in which the goods are delivered).

ENVIRONMENTAL ASSESSMENT

Activities subject to environmental assessment

20 | Which types of activities are subject to environmental assessment?

The construction, modification and operation of projects listed in the annex of the Environmental Impact Assessment Act or relevant state laws (eg, projects affecting public roads) that could have an adverse effect on the environment require an environmental impact assessment (EIA). The procedure and requirements are regulated in the EIA Act. Projects subject to an EIA encompass, for example (renewable) energy projects, railways, airports, sugar, paper, tiles or steel production, breeding of animals exceeding certain numbers, holiday complexes and gravel pits. The EIA is part of the permit proceeding for a planned activity and covers (non-)industrial projects. The conditions of an EIA vary in accordance with the scope of the project. For example, a wind farm with 20 facilities (higher than 50 metres) requires a full (mandatory) EIA, while a wind farm with only 36 facilities triggers an EIA related to the conditions of the envisaged location ('screening'). Several small projects may fall within the scope of the EIA requirement to avoid 'salami tactics'. EIAs often give rise to actions by environmental NGOs.

In the case of natural disasters (flooding), energy shortages and rising energy prices, exemptions to the EIA Act come into view, the latest being an exemption for the reconstruction of railway tracks after a flood.

Environmental assessment process

21 | What are the main steps of the environmental assessment process?

The EIA begins with the authority's decision on whether to perform an EIA. The project developer submits the documentation for assessing the project covering all its features, such as size, performance, location and potential environmental impacts. The scope of the investigation is then defined and, upon application, discussed with all involved authorities and stakeholders, such as neighbours, environmental NGOs and affected municipalities ('scoping'). On the basis of the scoping, the investigations, reports and expert opinions are performed. The final EIA report, which the project developer submits to the authority, contains likely environmental impacts and, inter alia, a description of the environment, the location and measures taken to prevent the occurrence of adverse environmental effects. Relevant reports and recommendations as well as the EIA report are made subject to a public hearing. The EIA report is considered by the authority when issuing the approval for the project as well as statements. The conclusions drawn from the EIA report by the authority can be challenged by the affected parties together with the final approval. The decision to approve or reject the project must be published by the authority.

REGULATORY AUTHORITIES

Regulatory authorities

22 | Which authorities are responsible for the environment and what is the scope of each regulator's authority?

Federal level

On the federal level, the Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection is responsible for the government's environmental policy, with direct or indirect support from the following:

- The Environment Agency gathers data concerning the environment, commissions expert opinions and provides policy advice to federal bodies and information to the general public. It deals with, inter alia, waste avoidance, climate protection and pesticide approvals.
- The Agency for Occupational Health and Safety is responsible for all matters involving occupational safety and health, chemicals and biocides. It advises policymakers (eg, under the EU Regulation on Registration, Evaluation and Authorisation of Chemicals) and performs functions concerning hazardous substances and product safety legislation.
- The Federal Institute for Materials Research and Testing is a scientific and technical institute undertaking research in key areas of safety engineering, testing methods and standardisation (eg, relating to eco-design requirements for energy-related products). It is responsible for the implementation and evaluation of physical and chemical tests of materials, including the preparation of reference processes and materials. It further issues notifications in the rank of technical rules, on product safety standards.
- The Federal Agency for Nature Conservation is a higher federal authority that provides professional, scientific and administrative expertise in nature conservation and landscape management.

State level

The 16 German states have their own ministries for the environment supplemented by state authorities. They are responsible for the execution of environmental laws and are split into higher and lower authorities. The higher authorities issue permits for industrial installations, plan approvals for infrastructure projects and water management and ensure the protection of nature in a region, among other things. The lower authorities are responsible for either the district or the municipal level and deal with local issues.

Investigation

23 | What are the typical steps in an investigation?

In investigations, a distinction has to be made between criminal investigations owing to suspected environmental crimes and investigations as an enforcement measure for environmental compliance. Criminal offences are investigated by prosecutors, whereas authorities are competent for investigations in relation to enforcement and administrative offences. Authority investigations of the industrial operator can be announced or unannounced. Unannounced investigations require an imminent environmental risk or that the purpose of the measure cannot otherwise be achieved.

In an investigation all measures compatible with the proportionality principle are possible. Depending on the level of suspicion, the intensity of the investigative action can increase. This includes, for example, a request for access to files, commissioning of expert opinions, measurements carried out by either the operator or the authority and site visits. Operators subject to authority investigations have a right to be heard and to challenge actions and orders.

Administrative decisions

24 | What is the procedure for making administrative decisions?

Before making administrative decisions (eg, granting an environmental permit for an industrial installation or an infrastructure project) the authority consults with the stakeholders (the applicant, neighbours, environmental or other NGOs and other authorities) and (usually) takes into account the findings and objections. Where a decision only affects the applicant, the applicant must be granted a hearing right in advance. Administrative decisions need to be sufficiently precise, and the authority must give reasons for its decision and must set out the possibilities for legal redress.

Sanctions and remedies

25 | What are the sanctions and remedies that may be imposed by the regulator for violations?

The German environmental laws provide for a variety of remedies for non-compliance, which are generally governed by the principle of proportionality. Before orders are imposed (eg, on industrial operations) a hearing is granted to enable the operator to take action voluntarily. Often, the authorities are open to discussions on how to restore compliance. Whenever this is not the case, the authorities can access business premises, request documents and perform investigations. They may order appropriate measures and enforce them, including a partial or complete shutdown of operations or, in a worst-case scenario, revoke a permit (partially or fully). This instrument is a rarely used last resort to fight non-compliance in an industrial plant.

Producers or importers in the EU must comply with (mostly EU-wide harmonised) requirements of product laws. In case of non-compliance with product regulations, the market surveillance authorities have a broad range of enforcement actions, the most far-reaching being the prohibition of sale and recall. In 2022, the European Commission published a proposal for a Regulation establishing a framework for setting ecodesign requirements for sustainable products (and repealing the current Eco-design Framework Directive) which, once adopted, will dramatically increase the product law requirements for energy-related products (ie, anyproductthathasanimpactonenergyconsumption duringuse).

In extended producer responsibility (EPR) the producers must also ensure take-back, reuse or due recycling and disposal of their products (such as packaging, electrical and electronic equipment, batteries and other products). This regularly entails registering with the national clearing houses and filing data on products and waste products. Also, producers usually contract specialised companies (dual or collective schemes) to perform collection and due disposal of the products once they have become waste. All of these duties can also be enforced and non-compliances can be sanctioned by the authorities.

Appeal of regulators' decisions

26 | To what extent may decisions of the regulators be appealed, and to whom?

As a rule, legal redress is granted against final decisions that are in some way disadvantageous to the addressee or third parties. Interim injunctions may be possible whenever accomplished facts must be ruled out or where an administrative decision is directly enforceable (ie, legal redress does not result in a suspension of the effect of the administrative decision). In these cases, the court weighs the consequences of a suspension of the decision taken with the risk of the applicant not being successful on the basis of a fully fledged legal assessment in the main proceedings. Any evidence can be used by the parties. Under German law, however, the administrative courts investigate the facts ex officio in the main proceeding.

JUDICIAL PROCEEDINGS

Judicial proceedings

27 | Are environmental law proceedings in court civil, criminal or both?

Administrative courts and the European Court of Justice

The majority of environmental legislation in Germany pertains to administrative law. Permits (including the consultation of the stakeholders), orders (eg, to restore compliance in an industrial installation) and other decisions are issued in administrative proceedings by the authorities. As a result, administrative decisions can be challenged before the administrative courts. Administrative courts are also competent for the judicial review of contractual agreements with the authorities. If the interpretation of (directly) applicable EU law is an issue, the higher instances have to submit the questions on the interpretation of EU law to the European Court of Justice (ECJ), which issues a preliminary ruling.

Civil courts

Whenever applicable regulations are governed by civil law the civil courts have jurisdiction. For example, the Environmental Liability Act regulates the civil law liability of operators of certain listed installations for any damage caused by environmental impacts to life, limb or property of private parties up to a maximum amount of €85 million.

Criminal courts

Criminal offences against the environment are dealt with by the criminal courts. Administrative offences (fines) are imposed by the authorities, but can also be subject to judicial review before the criminal courts.

Powers of courts

28 | What are the powers of courts in relation to infringements of environmental law?

The powers of the courts depend on whether the authorities' decision was based on discretion either when assessing the facts (prognoses or risk assessments on environmental facts, relations or interconnections) or with regard to the action required or whether the decision is fully controllable. If the authority has discretion, the court may only review whether the authority applied its discretion within the legal limits (no extraneous considerations, compliance with the legal basis, proportionality, etc).

The decision of the administrative courts further depends on the type of action. In the event that a decision is challenged the court can suspend or withdraw the unlawful decision. If a permit is applied for and denied the court may not be in a position to grant the permit, but must require the authority, for example, to issue a new decision based on additional investigations, expert statements or information to be submitted by the applicant.

Interim injunctions may be possible whenever accomplished facts must be ruled out or where an administrative decision is directly enforceable (ie, legal redress does not result in a suspension of the effect of the administrative decision).

Civil claims

29 | Are civil claims allowed regarding infringements of environmental law?

Civil claims

The Act on Environmental Liability provides for civil law claims of private parties in the event that certain listed industrial installations cause damage to their life or limb, properties or objects. If the installation was operated in compliance with the relevant environmental provisions, the operator's liability for property damage is excluded for non-substantial damage and it can rebut the assumption of causation of damage by its operations.

Agreements

Contractual agreements are possible between private parties, for example, on the allocation of costs for damage (such as a remediation of soil contamination between the seller and the purchaser of a contaminated site). The authorities are, however, not bound by such agreements between private parties under civil law. Agreements of operators with the authorities are governed by administrative law since they replace the issuance of a unilateral administrative decision by the authority. Here, the operator can agree with the authority on a timetable to implement or restore environmental compliance.

Defences and indemnities

30 | What defences or indemnities are available?

Environmental liability under German law is strict liability (ie, it applies regardless of fault). This means that possible defences are limited, for example, to force majeure, causation by another party, absence of risk for human health or the environment, adequate existing emergency procedures and prevention measures, and rapidly implemented remedial or long-term prevention measures. In the case of civil law liability, the offender may argue that it did not act wilfully or negligently.

Directors' or officers' defences

31 | Are there specific defences in the case of directors' or officers' liability?

Criminal liability

Under German law, there is no corporate criminal liability, but only of individuals, when acting for the company. Directors and officers are criminally liable for their own and their employees' actions in the case of specific instructions or if they have assumed responsibility otherwise. A defence would then relate to unforeseeable behaviour beyond instruction, adherence to the conditions of a permit or a compliance system.

In 2020, the government presented the draft bill of the German Corporate Sanctions Law introducing criminal liability of corporates, regulating internal investigations and joining up with the existing sanctions regimes in other Western states. Corporate sanctions were to be imposed on the company when, in particular, management personnel commit criminal offences, including environmental crimes. The bill was subject to fervent debate; in particular, multinational corporates criticised the regulations for not matching up with corporate reality. The legislative project was abandoned before the new German government was elected in September 2021. Thus, a new bill will have to be proposed which, despite the controversy on the subject, will occur sooner or later.

Furthermore, the new German Law on Corporate Due Diligence Responsibilities in Supply Chains was adopted in 2021. It establishes the responsibility of companies with more than 3,000 employees for the entire supply chain. They have to ensure compliance with human rights and environmental concerns in their business operations and impose equivalent due diligence responsibilities on their suppliers (regardless of where they are located).

Liability for administrative offences

With regard to administrative offences in Germany, the company is primarily liable for environmental offences. However, managers may become personally liable if they act wrongfully. They are not only liable for their own infringements but can also be held liable for employees' violations if they have failed to duly supervise them or to establish an appropriate supervision system. Therefore, a possible defence is acting in compliance with the requirements of such a supervision system.

Corporate Sustainability Due Diligence

In early 2022, the European Commission published a proposal for a Directive on Corporate Sustainability Due Diligence (COM(2022) 71 final) which will require (very) large EU and non-EU companies to set up mandatory due diligence practices, which are aimed at identifying, preventing, mitigating or terminating the adverse impacts of corporate activities on human rights and the environment. The proposal includes a duty of care of directors in relation to sustainability matters which, in the next step, will then have to be implemented in national German law.

Appeal process

32 | What is the appeal process from trials?

Appeal courts

Whenever the administrative courts are the first instance, there is an appeal instance reviewing the facts (higher administrative courts). The Federal Administrative Supreme Court only reviews and ensures the correct application of the laws. It harmonises the interpretation of federal laws with binding effect throughout Germany. It does not, however, interpret state laws. The Federal Constitutional Court reviews compliance of decisions or laws with the Constitution and fundamental rights.

ECJ

Usually, only the higher administrative courts refer questions on the interpretation of EU laws or their German implementation to the European Court of Justice for a preliminary ruling. The national courts decide their cases on the basis of such rulings. Thus, in a matter we advised on, the ECJ opened permits under the Emissions Control Act to judicial review regarding species and habitat protection. As a consequence, the German court had to withdraw the permit for a power plant on the basis of the ECJ's ruling. Further, the Act on Legal Redress by environmental NGOs had to be amended.

INTERNATIONAL TREATIES AND INSTITUTIONS

International treaties

33 | Is your country a contracting state to any international environmental treaties, or similar agreements?

POP Convention

Germany is a signatory to most international environmental treaties and agreements, among them various conventions banning certain substances from product chains and the market, among them the Stockholm Convention prohibiting persistent organic pollutants (POPs) that are not readily degradable and, thus, build up in human and animal bodies. POPs can, via air, water or the food chain, have toxic effects far from the place where they were released. Further, they may disrupt the reproductive process, give rise to hormonal disorders or cause cancer. POPs are by now broadly eliminated in product chains (eg, in functional clothing, firefighting foams, plasticisers for building materials and plant protection products). The obligations were implemented into German law and are continuously enforced.

Aarhus Convention

The Aarhus Convention gives, as a rule, private parties and NGOs broad access to environmental information, administrative procedures and legal redress. It is implemented into EU law by the Directive on Environmental Impact Assessments and some obligations in the Industrial Emissions Directive, which Germany, in turn, transposed into national law.

Espoo Convention and bilateral agreements

The Espoo Convention regulates the cross-border environmental impact assessment (EIA) procedure (including authority and public participation) in the case of transboundary infrastructure or other projects or national projects with transfrontier impacts. It applies to motorways or railways, electricity networks, gas pipelines and dangerous industrial installations, among others. The Convention is flanked by bilateral agreements such as the German–Polish EIA Agreement or project-related international treaties such as the treaty between Germany and Denmark relating to the Fixed Fehmarnbelt Project.

UN Plastic Pollution Convention and High Ambition Coalition to End Plastic Pollution

In 2022, the UN obtained a unanimous mandate to negotiate a Convention on Plastic Pollution, which is to be in place and binding by the end of 2024. Germany joined, also in 2022, the High Ambition Coalition to End Plastic Pollution that, inter alia, pursues the reduction of plastic waste and the development of closed-cycle plastic materials.

International treaties and regulatory policy

34 | To what extent is regulatory policy affected by these treaties?

Substantial impacts of the Aarhus Convention

The implementation of the Aarhus Convention into EU and national law (inter alia, in the Environmental Information Act, the Act on Environmental Impact Assessment and the Legal Redress Act for environmental NGOs) has substantially changed public participation and legal redress in Germany. By now, environmental NGOs have, for example, successfully challenged denials of access to authority files, infrastructure permits without prior or with a deficient EIA, or permits under the Emissions Control Act without an appropriate assessment of impacts on protected species or habitats under the Natura 2000 regime. Also, where environmental NGOs initially did not have legal redress at all, they broadened their actions rights by invoking non-compliance of the national laws with the Aarhus Convention and EU implementing regulations. Because in many of these cases the European Court of Justice decided on the required interpretation of the national laws (in light of the obligations under the Aarhus Convention and EU law) and found the laws to be deficient, the German legislature had to amend the regulations accordingly.

UPDATE AND TRENDS

Key developments of the past year

35 | Are there any emerging trends or hot topics in environment law in your jurisdiction?

Environmental agenda

In times of insecurity, rising prices and visible impacts of climate change the transition to a closed-cycle economy for products and resources, stricter control of dangerous products and substances, and decarbonisation of energy generation, industry, traffic and households continue to dominate the German environmental agenda. In parallel, a big effort is being invested into an acceleration of the needed permitting of (renewable) energy projects and an upgrade of the railway infrastructure to reduce greenhouse gas emissions and achieve carbon neutrality by 2045. These goals have to simultaneously meet the demands of environmental protection which are mostly based on EU laws.

Extended Producer Responsibility (EPR)

In 2022 the core product regulations for packaging, waste electr(on)ical equipment and batteries have been strengthened resulting in 'exploding' registration numbers at the German clearing houses. Further waste streams are to be regulated accordingly. For single-use plastic products, as of 2023, a registration system and a fund will be in place for producers to pay their share of the collection and cleaning costs of single-use plastic thrown away. One of the big challenges regarding plastic is the aim to set up a closed-cycle economy for plastic materials.

Furthermore, the European Green Deal and recent EU initiatives to save or recover (critical) raw materials have led to many incentives for German industry to develop recycling and circular economy technologies.

Air quality

The EU air quality requirements for particulate matter, NO_2 and CO_2 are reshaping urban traffic with bans on older (diesel) cars, less room dedicated to car traffic, reduced speeds and a general shift to electromobility, which is also transforming the German automotive industry. The German government still incentivises investments in infrastructure and e-mobility, and for greater energy efficiency and decarbonisation (see article on Climate regulation). In parallel, strong incentives have been used to motivate more people to use trains and public transport.

Acceleration of permit procedures

To accelerate, for example, permitting of important infrastructure and (renewable) energy projects, the 'Easter' and 'Summer Legislative Packages' introduced legal priority of such projects (including where Natura 2000 sites are affected) and not only reduced distance requirements (eg, to wind farms) but also focused and reduced nature protection. Also, the German states were obliged to reserve up to 2% of their territory for wind farms.

However, the possibilities for NGOs and pressure groups are still being expanded by the courts, mainly due to provisions based on the requirements of the Aarhus Convention. As a result, infrastructure, energy and industry projects can be successfully hindered or considerably delayed for reasons of nature protection.

A brand-new bill of the government intends to introduce changes in the procedural rules for administrative courts to accelerate decisions in legal redress against important infrastructure, including high-speed rail tracks, the construction of high-voltage grids, renewable energy projects and new gas infrastructure. The new regulations, should they become law, appear quite effective to achieve their aims but will have to be tested for their compatibility with EU laws.

The biggest challenge

The biggest challenge, however, will consist in preserving environmental protection (including biodiversity and human health) in times of war, energy shortage and natural disasters. Often the return to climate-damaging solutions appears to be the first emergency reaction. Environmental protection here goes hand in hand with the battle against climate change.

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LEGISLATION

Main environmental regulations

1 | What are the main statutes and regulations relating to the environment?

There are multiple legal instruments dealing with the environment, the most notable of which are mentioned below:

- The Environment (Protection) Act, 1986 (EPA) is the umbrella legislation for environmental protection in India. It empowers the union government to initiate various steps for environmental protection and improvement, some of which include the determination of standards for emissions and effluents from industries, regulation of the location of industries, assessment of the environmental impact of projects before they commence operations and, most importantly, framing rules and regulations on various aspects relating to environmental protection across the country. In exercising the powers provided under this Act, the union government has introduced multiple rules, regulations and policies. Some of these include the Coastal Zone Regulation Notification, 2019 (CRZ Notification); Environmental Impact Assessment Notification, 2006 (EIA Notification); Solid Waste Management Rules, 2016; E-Waste (Management) Rules, 2016; Plastic Waste (Management) Rules, 2016; and Hazardous and Other Wastes (Management) Rules, 2016.
- The Water (Prevention and Control of Pollution) Act, 1974 (Water Act) lays down the framework for the prevention and control of water pollution.
- The Air (Prevention and Control of Pollution) Act, 1981 (Air Act) lays down the framework for the prevention, control and abatement of air pollution.
- The Forest (Conservation) Act 1980 (Forest Act) provides the framework for the conservation of forests in India and the requirement to obtain prior clearance for diversion of forest land for non-forest purposes.
- The Biological Diversity Act, 2002 (Biodiversity Act) provides for the conservation and sustainable use of biological resources and the fair and equitable sharing of the benefits arising out of their use.
- The Wildlife (Protection) Act, 1972 (Wildlife Act) is the legislation focussing on the conservation of wildlife species and their habitats in India.
- The National Green Tribunal Act, 2010 provides for the establishment of the National Green Tribunal (NGT) for the adjudication of cases involving any substantial question relating to the environment.
- The Public Liability Insurance Act, 1991 lays down the requirement to obtain public liability insurance for providing immediate relief to persons affected by accidents while handling any hazardous substance.

Integrated pollution prevention and control

2 | Is there a system of integrated control of pollution?

The Air Act and the Water Act mandate industries that are likely to emit pollutants or discharge effluents to obtain a prior consent from their respective State Pollution Control Board (SPCB) or Union Territory Pollution Control Committee (UTPCC) to establish and operate their industrial facility. The Central Pollution Control Board (CPCB) has also released a list categorising various industries into red, orange, green and white based on their pollution potential. While the red category industries are highly polluting industries and require consent from the SPCB or UTPCC, white category industries do not require prior consent but only need to inform the SPCB or UTPCC. These environmental consents prescribe conditions and standards for undertaking industrial activities, based on factors such as the nature of raw materials, products being manufactured, production quantity, emissions, effluents, hazardous and other wastes generated, wastewater utilisation, water consumption and effluent treatment.

Similarly, there are requirements for seeking environmental consents and authorisations under other legislations as well depending on the nature of the industrial activity and the proposed location of a given industry. For instance, approval is required under:

- the Wildlife Act for projects located in or around notified protected areas;
- the Biodiversity Act for commercial utilisation of biological resources;
- EIA Notification to assess the environmental impact of a proposed project; and
- CRZ Notification for projects located in notified coastal zones.

Soil pollution

3 | What are the main characteristics of the rules applicable to soil pollution?

There are multiple pieces of legislation that are relevant in the context of soil pollution in India. If the release of any pollutant has caused the contamination of soil, groundwater or land, the extent of liability will largely depend on the nature of the business activity, the location of the industry and the cause of contamination. The law requires that the collection and testing of samples is done according to the provisions of the EPA and the Water Act and the rules notified under these legislations. In cases where any contamination is discovered, the law provides for liability, which could be civil or criminal or both. Additionally, it may result in the closure of the industrial facility until such contamination is remediated and the non-compliances are addressed. In such cases of contamination, the current occupier or operator of the facility where the contamination has been discovered will be held liable. As mentioned above, this liability could include the cost of clean-up and remediation, environmental damages and compensation to those affected by such

pollution. If the pollutant is 'hazardous' in nature, the Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 (Hazardous Waste Rules) and the Manufacture, Storage and Import of Hazardous Chemical Rules, 1989 will assume relevance. In cases involving hazardous chemicals and wastes, the extent of liability may be higher due to the higher potential of such hazardous substances and wastes to cause harm.

Regulation of waste

4 | What types of waste are regulated and how?

Specific rules have been framed to regulate various types of waste, some of which are mentioned below:

- The Hazardous Waste Rules mandate the safe handling and disposal of specified waste products that are considered hazardous in nature. Occupiers handling, generating or disposing of such waste are essentially required to obtain prior authorisation from the relevant SPCB or UTPCC and ensure regular disclosure of methods used for handling and disposing of it in an environmentally safe manner.
- The E-Waste (Management) Rules, 2016 mandate the environmentally safe management of waste from specified electronic and electrical equipment. Persons producing or marketing such equipment are required to obtain the requisite authorisation from the CPCB and ensure their safe 'end-of-life' disposal as per the Extended Producer Responsibility (EPR) norms.
- The Plastic Waste Management Rules, 2016 require persons manufacturing or using plastic material for packaging or wrapping commodities to obtain prior authorisation from the CPCB or the relevant SPCB or UTPCC. They also need to ensure environmentally safe collection and disposal of plastic waste generated from their products under the EPR framework.
- The Bio-Medical Waste Management Rules, 2016 provide that persons generating, handling or disposing of biomedical waste obtain prior authorisation from the relevant SPCB or UTPCC and regularly disclose details like the manner of handling and disposal adopted for the safe disposal of such waste.
- The Solid Waste Management Rules, 2016 essentially require persons generating solid municipal waste to ensure the segregation, collection and disposal of such waste through specified channels.
- The Construction and Demolition Waste Management Rules, 2016 have been introduced to regulate the waste generated due to construction and demolition activities in the country, as they are a major source of air pollution.

Regulation of air emissions

5 | What are the main features of the rules governing air emissions?

The Air Act mandates that any industry likely to emit air pollutants must obtain a prior consent to establish and thereafter the consent to operate from the SPCB or UTPCC in the concerned state or union territory where the industry is proposed to be located. The central government has introduced the National Ambient Air Quality Standards under the Air Act and standards under the EPA to provide parameters and standards for air pollutants such as sulphur dioxide, particulate matter, ozone, lead and carbon monoxide. SPCBs or UTPCCs can also introduce stricter standards for industries operating in a region with poor air quality.

The central government has produced guidelines, such as the Energy Conservation Building Code, 2017, Eco-Niwas Samhita, 2018, the Design Guidelines for Energy Efficient Multi-Storey Residential Buildings, 2014 and the Energy Efficiency Label for Residential Buildings, 2019, to encourage energy conservation and efficiency in residential and commercial buildings across India. Under the Energy Conservation Act, 2001, authorities can direct an energy audit of buildings (where notified energy-intensive industries are operating) if they consider it necessary for ensuring energy efficiency and conservation in such a building. Currently, a specified category of buildings is required to engage empanelled energy auditors for building design, installation of energy conservation measures and equipment.

Protection of fresh water and seawater

6 | How are fresh water and seawater, and their associated land, protected?

In India, water resources are managed and regulated by the government on behalf of the general public as per the public trust doctrine. The Water Act lays down the framework for the prevention and control of water pollution in India. It prohibits the release of pollutants beyond prescribed limits into any stream, well, sewer or land. SPCBs and UTPCCs have been set up under this statute to inspect, issue approvals, and regulate and prevent industries from discharging effluents into a stream, sewer or land. Further, for the protection of seawater, CRZ Notification regulates commercial activities in the coastal zones identified in India's coastal areas based on their distance from the coastline and their ecological sensitivity. Such activities require prior approval from the Coastal Zone Management Authorities established under this notification. Any violation of this law will attract civil or criminal liability.

Protection of natural spaces and landscapes

7 | What are the main features of the rules protecting natural spaces and landscapes?

The EPA provides powers to the union government to take measures through the Ministry of Environment, Forest and Climate Change for environmental protection and conservation. It can, among other aspects, regulate the location of industries, designate ecologically sensitive zones, impose restrictions on activities therein, and examine proposed projects in any area before their commencement to assess their potential impacts on the environment and prescribe appropriate conditions to address such impacts.

The Forest Act mandates any person seeking the diversion of forest land for non-forest purposes to obtain prior clearance from the union government. It also has obligations related to compensatory afforestation and payment for forest land diverted. Moreover, the Wildlife Act provides for different types of protected areas in India – national parks, wildlife sanctuaries, community reserves and conservation reserves. Commercial activities within a national park or wildlife sanctuary, or in Eco-Sensitive Zones around them, require prior approval from the National Board for Wildlife headed by the Prime Minister of India. The rights of private persons dependent on forest land and protected areas are required to be heard, considered and identified before the proposed activities are commenced in these areas.

Protection of flora and fauna species

8 | What are the main features of the rules protecting flora and fauna species?

The Wildlife Act lays down the regulatory framework for the protection of wildlife and its habitat in India. The Act has six schedules, with each schedule providing a different level of protection to wild flora and fauna, which is usually based on their population level, threats and conservation needs. The highest protection is accorded to threatened species such as rhinos, tigers, leopards, elephants and Great Indian Bustards. The Act prohibits hunting, possessing, dealing and trading in threatened wildlife species and products derived from them. India has also set up an

administrative system to regulate trade in wildlife as per the Convention on International Trade in Endangered Species of Wild Fauna and Flora. Certain animals, such as crows and mice, are mentioned as vermin (ie, provided with the lowest level of protection). The Act also provides for different types of protected areas where hunting, extracting or trading in any wildlife is strictly restricted. In addition to the Wildlife Act, the Biodiversity Act provides for the conservation and sustainable use of biological resources and the fair and equitable sharing of the benefits arising out of their use.

Noise, odours and vibrations

9 | What are the main features of the rules governing noise, odours and vibrations?

The Noise Pollution (Regulation and Control) Rules, 2000 regulate the level of noise in any area. They provide different standards for industrial, commercial, residential and silence zones for day and night. State and local government authorities including the SPCB, UTPCC, District Magistrate, Police Commissioner, or any other officer not below the rank of the Deputy Superintendent of Police designated for this purpose are responsible to enforce the prescribed standards. The rules allow any person to file a complaint with the concerned government authorities if the noise level from any activity exceeds the prescribed standards. There are provisions concerning public nuisance in India's criminal law as well which cover noise, odours and vibration.

Liability for damage to the environment

10 | Is there a general regime on liability for environmental damage?

In cases where the violation of environmental statutes like the EPA, Air Act and Water Act results in pollution or any adverse impact on the environment in a facility or region, the person in charge or responsible for such damage will be held liable. The liability for such damage could be civil, criminal or both in nature. As per the existing norms, the current occupier or operator of the facility is held liable for the environmental harm according to the polluter pays principle. There are guidelines in place to determine the amount of environmental compensation to be paid for such harm, based on various relevant factors. The responsible person may also be prevented by the CPCB, SPCB or UTPCC from continuing such polluting activity until the remediation measures are taken and the operations are environmentally benign.

Environmental taxes

11 | Is there any type of environmental tax?

India levies a Goods and Services Tax Compensation cess on coal produced in or imported into India. India also levies an implicit carbon tax on petrol and diesel sold in India. Some states in India, such as Delhi and Goa, also levy cess or tax on polluting activities within their jurisdictions.

Environmental reporting

12 | Are there any notable environmental reporting requirements (eg, regarding emissions, energy consumption or related environmental, social and governance (ESG) reporting obligations)?

Any industry that requires environmental consent or clearance from the concerned authorities is required to submit an annual environmental statement providing information on air emissions, effluent discharge, waste generation, disposal, etc. A similar requirement to submit annual reports also exists for the generation and management of waste in India, be it hazardous, biomedical, plastic, e-waste, etc. Further, the Securities and Exchange Board of India has mandated the top 1,000 listed entities in India to make disclosures related to the ESG aspects of their operations in the prescribed format from the financial year 2022–2023.

Government policy

13 | How would you describe the general government policy for environmental issues? How are environmental policy objectives influencing the legislative agenda?

The government, in light of its international commitments, is focussing much more on issues relating to climate change, biodiversity loss, pollution, degradation of ecosystems and ocean acidification. India is focussing on the rejuvenation of rivers, reduction of air pollution, a shift to clean mobility and renewable energy, stricter standards for thermal power plants, groundwater recharge, scrapping of end-of-life vehicles, waste management and enhancing forest cover. These objectives have positively influenced the legislative agenda with multiple revisions being made to the existing environmental law and new policies being introduced in recent times.

HAZARDOUS ACTIVITIES AND SUBSTANCES

Regulation of hazardous activities

14 | Are there specific rules governing hazardous activities?

Indian law regulates various types of hazardous substances and wastes. The generation, handling, management and disposal of specified hazardous waste generated from industrial activities require prior authorisation from the relevant State Pollution Control Board (SPCBs) or Union Territory Pollution Control Committees (UTPCCs). Further, industries manufacturing, utilising, importing or storing specified hazardous chemicals need to ensure compliance to prevent and control contamination from such chemicals. Persons or entities manufacturing, using, importing or storing specified hazardous micro-organisms also require prior permission from appropriate authorities. Industries handling such hazardous substances need to take out public liability insurance policy to pay compensation for any damages caused due to the accidents involving such substances.

Regulation of hazardous products and substances

15 | What are the main features of the rules governing hazardous products and substances?

The EPA defines 'hazardous substance' to mean any substance or preparation which, by reason of its chemical or physico-chemical properties or handling, is liable to cause harm to human beings, other living creatures, plants, micro-organisms, property or the environment.

The Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 mandate safe handling and disposal of specified hazardous waste (which can cause or are likely to cause danger to health or the environment). Occupiers handling, generating or disposing of such waste are essentially required to obtain prior authorisation from the relevant SPCB or UTPCC and ensure regular disclosure of the methods used for handling and disposing it in an environmentally safe manner.

The Manufacture, Storage and Import of Hazardous Chemical Rules, 1989 prescribe various requirements for the occupier of a property where specified hazardous chemicals are manufactured, imported, stored or utilised. The occupier must take steps to prevent any accident at the property through training of staff, disclosure of hazardous chemicals used at the site, preparation of safety reports and an on-site emergency plan detailing how major accidents would be dealt with, etc.

The Manufacture, Use, Import, Export and Storage of Hazardous Micro-Organisms/Genetically Engineered Organisms or Cells Rules, 1989 mandate persons manufacturing, using, importing or storing specified micro-organisms to obtain prior permission from the appropriate authorities. These organisms may be required for food, pharmaceutical or other products. Such persons must establish internal organisational committees for the administration of these organisms and comply with biosafety and contamination level guidelines to prevent any leakage or damage from such organisms.

Industrial accidents

16 | What are the regulatory requirements regarding the prevention of industrial accidents?

Industries handling specified hazardous chemicals, wastes or micro-organisms at the site must prepare an emergency response plan in case of industrial accidents. Industries also require fire safety approval for evacuation in case of fire. They must also ensure training of staff, disclose hazardous chemicals or wastes used or stored at the site and prepare safety reports.

The government is required to establish crisis groups at the central, state, district and local levels, which will be responsible for aspects such as planning, preparedness and mitigation of accidents at the site; preparation of emergency plans; training of personnel involved in handing hazardous chemicals; educating the population likely to be affected in a chemical accident about the remedies and existing preparedness in the area; conducting mock drills at the site and responding to public queries in this regard.

ENVIRONMENTAL ASPECTS IN TRANSACTIONS AND PUBLIC PROCUREMENT

Environmental aspects in M&A transactions

17 | What are the main environmental aspects to consider in M&A transactions?

It is important for any acquirer or buyer to undertake thorough environmental due diligence of the target entity for assessing the current status of its compliance with environmental law, historic non-compliances, pending enquiries by regulators, complaints and ongoing litigations etc. The acquirer needs to check if the target is operating with all relevant environmental approvals. It is also important to examine past non-compliances by such an entity, as the 'current occupier' (ie, the resulting entity or acquirer) will be held responsible for the damages caused by such past non-compliances at the site post the transaction.

Environmental aspects in other transactions

18 | What are the main environmental aspects to consider in other transactions?

In all commercial transactions it is important to assess the current status of compliance with environmental law, historic non-compliances, pending show-cause notices, ongoing litigations, pending complaints or findings in the inspection reports involving the relevant entity. It is important to check whether the entity is operating with all valid environmental clearances, consents and authorisations. It is also important to examine the past non-compliances by such entity, as the acquirer (who will be the 'current occupier' post transaction) will be held responsible for the damages caused by such past non-compliances at the site.

Environmental aspects in public procurement

19 | Is environmental protection taken into consideration by public procurement regulations?

The government has launched the Sustainable Public Procurement initiative under the government e-marketplace portal. The portal helps government buyers to procure various products and services with a sustainability component, including electric vehicles, water management services, waste management, energy efficiency services and the maintenance of solar, wind and hydro plants, etc. Similarly, the Green Room Air Conditioners initiative was also launched in 2021 to promote procurement of energy-efficient and environment-friendly air conditioners by government agencies.

ENVIRONMENTAL ASSESSMENT

Activities subject to environmental assessment

20 | Which types of activities are subject to environmental assessment?

The Environmental Impact Assessment Notification, 2006 (EIA Notification) provides that an environmental impact assessment must be carried out when seeking an environmental clearance (EC) for new projects or expansion or modernisation of existing projects. The notification lists various activities that require an EC from the central or state authorities, depending on factors such as size, location and production capacity. Power plants, metal industries, mining projects, chemical industries, infrastructure projects (highways, airports, ports), waste treatment plants and pharmaceutical industries are some examples of the projects that require a prior EC.

Environmental assessment process

21 | What are the main steps of the environmental assessment process?

EIA Notification provides for screening, scoping, public consultation and appraisal as the four stages for seeking an EC. The first two steps require the relevant government authorities to examine the application filed by the project proponent for the categorisation of the project on the basis of its location, size, capacity, etc., as well as the determination of key aspects for the EIA process. A draft EIA report is prepared by the project proponent on the basis of these aspects. The draft EIA report is then shared with the public for consultation through a public hearing and written comments. This process is to be completed within a period of 45 days. Advance notice of 30 days must be given to the public for this process. Based on the comments received from the public, a final EIA report is prepared by the project proponent and provided to the government authorities. This report is appraised and considered in detail by the expert appraisal committee, which may either recommend the project for an EC or reject it. It may also impose certain conditions for the operation of the project to mitigate its potential environmental impacts. Lastly, the central or state government authority accepts or rejects the application for an EC on the basis of the comments received from the concerned expert appraisal committee.

REGULATORY AUTHORITIES

Regulatory authorities

22 | Which authorities are responsible for the environment and what is the scope of each regulator's authority?

The Ministry of Environment, Forest and Climate Change is the nodal ministry for enforcing the regulatory framework related to the

environment, biodiversity, forests, wildlife and climate change in India. It lays down the general policy framework on environmental issues.

The Central Pollution Control Board (CPCB) is the central authority that frames the standards and implements the regulations relating to industrial pollution, waste management, emissions or effluent standards, etc. across the country with the assistance of the relevant State Pollution Control Boards (SPCBs) and the Union Territory Pollution Control Committee (UTPCCs). The CPCB can issue directions, restrict operations and impose environmental compensation against non-compliant industries.

The SPCBs and UTPCCs are responsible for granting environmental consents to the industries located within their jurisdiction and thus monitoring the operations of the industries on a regular basis. They are the authorities responsible for ensuring proper implementation of the regulations relating to pollution control, waste management, compliance with emission and effluent standards, etc. They have the power to issue directions, closure orders and remediation costs against non-compliant industries.

Investigation

23 | What are the typical steps in an investigation?

Authorities like the CPCB, SPCB and UTPCC have powers to conduct an inspection at any industrial facility based on complaints received from the public or on the basis of their own cognisance. They can seek any information about the activities being undertaken at the occupier's facility, which may include details about effluent discharges, air emissions, waste disposal, etc. They can, among other things, undertake a survey of any area within the facility, collect information, soil or water samples, enter and search any facility for any potential case of contamination, or ask the occupier or other persons to provide further information. However, these statutory powers are required to be exercised in accordance with the procedure prescribed under the law.

Administrative decisions

24 | What is the procedure for making administrative decisions?

If the regulatory authorities find any non-compliance on the basis of site inspection, sample analysis or online continuous monitoring system reports, a show-cause notice could be issued to the occupier or operator of the project for violation of environmental laws. Once the response is received, if it is not found to be satisfactory, closure orders could also be issued to such non-compliant projects. However, closure orders are issued only after the parties are given sufficient opportunity to show that they are compliant. This response may include reasons backed by scientific evidence, such as sample analysis reports and other documents to show that the occupier or operator has been operating the project in compliance with all environmental conditions and standards applicable in its case.

Sanctions and remedies

25 | What are the sanctions and remedies that may be imposed by the regulator for violations?

The authorities can issue directions requiring polluters or violators to cease or restrict operations or activities causing pollution until such violations are rectified, pay environmental compensation for the damage caused, install a specified technology or equipment to ensure compliance, etc. They can also disconnect electricity, water or other provisions for such an industry and initiate criminal prosecution against the persons responsible for the business activities of such violators.

Appeal of regulators' decisions

26 | To what extent may decisions of the regulators be appealed, and to whom?

The occupier can challenge the directions issued by the authorities either before the Appellate Authority (established under the Air (Prevention and Control of Pollution) Act, 1981 and Water (Prevention and Control of Pollution) Act, 1974) or the National Green Tribunal (NGT). An appeal can be filed before the Appellate Authority established by the state government within 30 days from the date of communication of the directions being challenged. Further, it could also file an appeal against such directions before the NGT within 30 days from the date of communication of such directions. Moreover, persons could also approach the relevant High Court under its writ jurisdiction seeking a remedy against the authority's directions. Orders of the NGT and the High Courts are appealable before the Supreme Court of India, which is the apex court in the country.

The aggrieved party could file an appeal against the order of the regulatory authority if it feels that there has been a violation of the principles of natural justice or, despite the industry being compliant, action has been initiated against it. Such instances could be those where the industry is compliant with the applicable laws and consent conditions, its effluents and emissions are in compliance with the prescribed standards and the authority has failed to appreciate the information and documents submitted before it or the sanctions imposed are not commensurate to the nature of the violation committed.

JUDICIAL PROCEEDINGS

Judicial proceedings

27 | Are environmental law proceedings in court civil, criminal or both?

India's environmental laws prescribe that their violation will attract civil liability, criminal liability or both. Civil liability will be imposed in the form of environmental compensation against the violators by the CPCB, SPCB or UTPCC and could be further revised by the courts, the National Green Tribunal (NGT) or the Appellate Authority based on relevant considerations. A criminal prosecution could also be initiated against persons responsible for the conduct of business of the non-compliant industry before the appropriate criminal court, which cannot be inferior to one helmed by the Metropolitan Magistrate or a Judicial Magistrate of first class.

Powers of courts

28 | What are the powers of courts in relation to infringements of environmental law?

India has established the NGT as an expert multi-disciplinary body to adjudicate cases involving substantial questions relating to the environment. While it adjudicates matters under both original and appellate jurisdiction, it has also been granted the power to take suo moto cognisance of issues involving the violation of environmental law. While adjudicating matters, the NGT can constitute expert committees for fact-finding exercises, including assessing the status of compliance with the law and the extent of damage caused. If it is proved that an individual or entity has violated the environmental law, the NGT has the power to issue interim or final directions requiring such individual or entity to shut down or restrict its operations, take specific measures for rectification, pay environmental compensation under the polluter pays principle, restore the damage caused to ecology, persons, or property, or pass any other direction that it may deem fit to ensure justice. The NGT usually directs the relevant regulatory authorities to initiate

appropriate action against such violators and ensure that its orders are complied with. It can also issue directions to initiate disciplinary action against government officials for failure to perform their statutory duties.

In cases where criminal prosecution has been initiated, the relevant criminal courts (which cannot be inferior to that of a Metropolitan Magistrate or a Judicial Magistrate of the first class) will determine the punishment for the responsible persons after their trial as per the criminal law.

Further, India's constitutional courts (High Courts and Supreme Court) can also adjudicate in environmental law cases under their writ jurisdiction and grant remedies to the aggrieved parties whose rights have been affected by such environmental violations.

Civil claims

29 | Are civil claims allowed regarding infringements of environmental law?

Yes, civil claims are allowed in cases of violation of environmental law. Non-contractual claims can be filed by an aggrieved person before the authorities or courts seeking relief from the activity causing such violations, payment of environmental compensation for the damage caused and restoration of the ecological damage.

Contractual claims can also be filed by the parties before the relevant court or tribunal seeking indemnification against environmental liabilities where provisions to this effect have been mentioned in the contract between the two parties.

Defences and indemnities

30 | What defences or indemnities are available?

While there are various defences available to a person, depending on the facts and circumstances of a case, some of the common ones could be:

- non-maintainability of the case due to the lack of jurisdiction of the authority or court, absence of locus standi of the claimant, or breach of limitation period prescribed in the relevant environmental statute;
- the person has ensured compliance with all relevant provisions that can be showcased with relevant scientific evidence; and
- said case falls under the exceptions to the tortious principle of 'strict liability' (ie, act of god, claimant's own fault, claimant voluntarily agreed to suffer harm, and damage caused due to an act of a third party).

The Supreme Court of India in *MC Mehta v Union of India*, (1987) 1 SCC 395 laid down the principle of 'absolute liability'. Under this principle, where a person is engaged in any hazardous or inherently dangerous activity and damage is caused due to an accident resulting from such an activity, such person would be absolutely liable without any exceptions, unlike the case of 'strict liability'.

Directors' or officers' defences

31 | Are there specific defences in the case of directors' or officers' liability?

Non-compliance with environmental laws in India makes a company, as also the person, who at the time the offence was committed was directly in charge of and responsible to the company for the conduct of its business, liable for punishment. However, in such cases, liability cannot be imposed if such person proves that the offence was committed without his or her knowledge, there was no way in which such person could have known about such non-compliance or that he or she exercised all due diligence to prevent the commission of such an offence.

Moreover, if it is proved that the offence has been committed with the consent or connivance, or is attributable to any neglect on the part of, any director, manager, secretary or other officer of the company, such director, manager, secretary or other officer shall also be deemed to be guilty of that offence and shall be liable to be proceeded against and punished accordingly.

The determination of the liability of directors is based on the facts and circumstances of a given case. In *Securities and Exchange Board of India v Gaurav Varshney*, (2016) 4 SCC 430, the Supreme Court of India held that the liability of a director for an offence committed by the company does not arise merely based on his or her designation or position in the company but is based on his or her role in the affairs of the company. Specific averments regarding the director's role in the affairs of the company need to be provided for holding him or her liable.

Appeal process

32 | What is the appeal process from trials?

The orders or judgments at the trial stage of criminal prosecution under environment laws can be appealed before the sessions court of the relevant jurisdiction. The decisions of the sessions court can be further appealed before the High Court and the Supreme Court of India.

INTERNATIONAL TREATIES AND INSTITUTIONS

International treaties

33 | Is your country a contracting state to any international environmental treaties, or similar agreements?

India is a party to various international environmental treaties, including the Declaration of the United Nations Conference on Human Environment or Stockholm Declaration (1972), the Convention on International Trade in Endangered Species of Wild Fauna and Flora (1975), the Montreal Protocol on Substances that Deplete the Ozone Layer (1987), the Basel Convention on the Control of Transboundary Movement of Hazardous Waste and their Disposal (1989), the Convention on Biological Diversity (1992), and the Rio Declaration on Environment and Development (1992).

International treaties and regulatory policy

34 | To what extent is regulatory policy affected by these treaties?

The Constitution of India empowers India's Parliament to make suitable laws for the effective implementation of international agreements, treaties or conventions to which India is a party. In response to its international commitments, India has implemented various laws and policies to address specific environmental issues across the country. The Supreme Court of India in *State of West Bengal v Kesoram Industries Ltd. and Ors*, (AIR 2005 SC 1646) observed that unless international commitments are enshrined in domestic law, they cannot be considered law of the land. However, courts can refer to these international commitments as a means to interpret domestic law, provided the international commitments are not inconsistent with domestic law. For instance, India enacted the Environment (Protection) Act, 1986, the Air (Prevention and Control of Pollution) Act, 1981 and the Water (Prevention and Control of Pollution) Act, 1974 to implement the provisions of the Stockholm Declaration (1972). Similarly, the Environmental Impact Assessment Notification, 2006 was introduced to implement the provisions of the Rio Declaration on Environment and Development (1992).

UPDATE AND TRENDS

Key developments of the past year

35 | Are there any emerging trends or hot topics in environment law in your jurisdiction?

The government of India is working on various aspects of environmental protection. These include management of different kinds of waste, such as e-waste and plastic waste. Draft rules to revise India's regulatory framework for e-waste management to meet the current market demands have been notified. Similarly, the obligations of producers, brand owners and importers to collect, recycle and manage plastic waste generated from their products have also been notified. The government has also prohibited the manufacture, use and sale of various single-use plastic products from 1 July 2022. Provisions to encourage biodegradable and compostable plastics have also been introduced.

The government is also focussing on creating a circular economy to promote resource efficiency and reduction in the exploitation of new resources for economic activities. This aspect has been enforced in the transportation sector through mandatory scrapping of end-of-life vehicles to reduce air pollution and promote the recycling and reuse of the material used for vehicle manufacturing. The Union Budget for financial year 2022–23 has also proposed various policy initiatives for other sectors to implement the circular economy.

Efforts are also being made to overhaul (through decriminalisation of minor offences, uniformity in compliance structure, suiting current market realities, etc.) the environmental framework. Consultation papers in this regard were recently circulated for the Air (Prevention and Control of Pollution) Act, 1981, the Water (Prevention and Control of Pollution) Act, 1974, the Environment (Protection) Act, 1986, and the Public Liability Insurance Act, 1991. Similarly, draft amendments to the Wildlife (Protection) Act, 1972 and the Biological Diversity Act, 2002 have also been introduced to propose key changes in these laws.

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LEGISLATION

Main environmental regulations

1 | What are the main statutes and regulations relating to the environment?

Law No. 32 of 2009 regarding Management and Protection of the Environment, as amended by Law No. 11 of 2020 regarding Job Creation (Job Creation Law) (together, the Environment Law), is the main regulation in Indonesia pertaining to the environment. The Environment Law covers broad aspects of environment utilisation and protection, including pollution control, environmental damage, administrative sanctions, the affirmation of environmental rights as part of human rights or civil liability, particularly strict liability for environmental damage, and criminal enforcement for perpetrators of environmental crimes.

There is a separate regulation, Law No. 23 of 2014 regarding Regional Governments, as amended by Law No. 1 of 2022 regarding the Financial Relationship between the Central Government and Local Governments, that grants regional governments the autonomy to enforce environmental protections in accordance with the Environment Law.

In addition, there are laws that are more narrowly focused to regulate specific areas or sectors of the environment, such as forest management and natural resources management. These laws include Law No. 41 of 1999 regarding Forestry, as last amended by the Job Creation Law (the Forestry Law); Law No. 5 of 1990 regarding Natural Resources and Ecosystem Conservation (Law 5/1990); and Law No. 18 of 2013 regarding Prevention and Eradication of Forest Damage, as amended by the Job Creation Law.

Other government regulations, such as those on the management and protection of the environment and peatland protection and management, as well as implementing regulations issued by Indonesia's Ministry of Environment and Forestry (MOEF), should also be taken into account.

Integrated pollution prevention and control

2 | Is there a system of integrated control of pollution?

Indonesia has an integrated pollution control system. The MOEF recently issued MOEF Regulation No. 13 of 2021 regarding Continuous Industrial Emission Monitoring Information System (MOEF Regulation 13/2021). This regulation obliges all businesses or activities that are mandated to monitor their emissions using the Continuous Emissions Monitoring System to integrate their data into the Information on Continuous Industrial Emission Monitoring System (SISPEK) no later than 1 January 2023. The MOEF will manage and oversee SISPEK. There are 10 industries required to use SISPEK. They are:

- iron and steel smelting;
- pulp and paper;
- synthetic fibre (rayon);
- carbon black;
- oil and gas;
- mining;
- thermal waste treatment;
- cement;
- thermal power generation; and
- fertiliser and ammonium nitrate.

The MOEF also has other systems to monitor environmental quality standards in Indonesia, eg, the Air Pollution Standard Index and the Wastewater Quality Monitoring System, among others.

Soil pollution

3 | What are the main characteristics of the rules applicable to soil pollution?

There are two types of soil pollution under the Environment Law, namely toxic and hazardous waste (B3 Waste) and non-B3 Waste. B3 Waste is categorised based on level of hazard: Category 1 B3 Waste, which has acute and direct effects on humans and the environment, and Category 2 B3 Waste, which has sub-chronic or chronic and indirect effects on humans and the environment.

To determine levels of contamination and whether the waste is categorised as B3 Waste or non-B3 Waste, the following waste characteristic tests can be conducted:

- characteristic test for explosivity, ignitability, reactivity, infectivity or corrosivity;
- characteristic test for toxicity using the LD_{50} Toxicity Test;
- characteristic test for toxicity using the Toxicity Characteristic Leaching Procedure; and
- characteristic test for toxicity using the Sub-chronic Toxicity Test.

The list of contaminants and toxicity parameters is provided in Government Regulation No. 22 of 2021 regarding Implementation of Environmental Protection and Management (GR 22/2021).

Anyone who carries out activities related to B3 Waste and where the activities have caused environmental pollution is obliged to carry out restoration or remediation of the contaminated land as well as make certain compensation. There is no statute of limitation applicable to environmental pollution or damage attributable to a business activity that uses, produces or manages B3 Waste. In addition, anyone who assigns its business to another party or changes the nature of the business activities remains responsible for any environmental pollution.

Regulation of waste

4 | What types of waste are regulated and how?

Law No. 18 of 2008 regarding Waste Management (the Waste Law) defines waste as the remnants of daily human activities and natural processes in solid form. There are three types of waste:

- household waste is defined as waste that originates from daily household activities, which does not include faeces and specific waste;
- waste similar to household waste, defined as household waste that originates from commercial areas, industrial areas, special areas, social facilities, public facilities or other facilities; and
- specific waste, defined as waste that due to its nature, concentration or volume requires special management.

In general, the management of household 'waste' and 'waste similar to household waste' is mainly regulated under Government Regulation No. 81 of 2012 regarding Management of Household Waste and Waste Similar to Household Waste (GR 81/2012). GR 81/2012 governs that every waste producer has the legal obligation to reduce and handle waste. The Indonesian central government and regional governments have the overall obligation to ensure that waste management and handling are well implemented and environmentally sound in accordance with the objectives of waste management.

'Waste similar to household waste' and 'specific waste', which can be categorised as B3 Waste, require the parties who use or produce B3 Waste, or both, to conduct waste management and obtain a waste-related licence for each waste-related activity (eg, storage, collection, transportation, utilisation, processing, landfilling and dumping of B3 Waste).

Regulation of air emissions

5 What are the main features of the rules governing air emissions?

Air emissions are governed under GR 22/2021, which defines emissions as air pollutants resulting from human activities that are introduced or included in the air, that may or not potentially cause air pollution. GR 22/2021 divides emissions into movable and immovable emissions. Other provisions regulate 'nuisance' emissions (in the form of sounds, smells or vibrations) separately from air emissions. Immovable emissions are defined as permanent, non-moving or from a fixed source, including factory chimneys, industrial areas, water processing areas, housing, plantations and forestry. Whereas movable emissions are defined as non-permanent emissions originating from non-road and road-based means of transportation. Movable emissions sources include business and activities in the automotive industry, land transportation and heavy equipment.

To ensure products in the automotive sector fulfil the quality standard for air emissions, they shall be tested by a laboratory that is accredited by the National Accreditation Committee or an accreditation agency that has signed a mutual recognition agreement with the Asia Pacific Accreditation Cooperation or the International Laboratory Accreditation Cooperation. For non-road-based land transportation and heavy equipment, the testing shall be carried out by personnel who have obtained a certificate issued by a certification agency in accordance with the provisions of laws and regulations governing the standardisation and conformity assessment sector.

The government controls air quality through the MOEF, which shall stipulate quality standards for both movable and immovable emissions (ie, limits on how much of certain pollutants can be emitted into the air). The MOEF may also issue technical approvals for certain emissions or pollutants for which quality standards have not been stipulated for certain businesses or activities, or both. These stipulated quality standards and technical approvals will then serve as guidance to be observed by businesses or activities in emitting emissions into the air. The technical approvals will generally contain, among other things, parameters and limits for air quality standards, as well as specific obligations and prohibitions. Typical obligations include the obligation to have an air emission control device, the obligation to observe air emission concentration and quality standards regularly, and air pollution control reporting obligations through an information system maintained by the MOEF. Standard prohibitions include the prohibition on direct emissions or sudden release and the disposal of non-fugitive emissions without using a chimney. In addition to obligations and prohibitions, a technical approval also will contain provisions on human resources competency standards, facilities and infrastructure, as well as the environmental management system adopted for emissions control.

In addition to the observance of quality standards and technical approvals issued by the government, GR 22/2021 introduced an obligation for all businesses or activities to internalise costs for managing air quality standards in their operations. These costs include those for air pollution control, development of low-emissions technology, use of clean fuel, human resources development, and other activities to support air pollution control.

The government has also envisioned energy efficiency through Government Regulation No. 70 of 2009 regarding Energy Conservation (GR 70/2009). This regulation provides a general mandate to all stakeholders (governments and private parties) to conduct energy conservation. However, the precise contours of the obligations are not further outlined in GR 70/2009, which mostly contains aspirational language. For business actors, the relevant responsibilities are to conserve energy in every business process, utilise energy-efficient technology and produce energy-efficient goods and services.

Under GR 70/2009, users with energy consumption equal to or more than 6,000 tonnes of oil equivalent are mandated to conserve energy through 'energy management', which includes regular energy audits conducted by an internal auditor or an accredited body certified by the Ministry of Energy and Mineral Resources. We note that more stringent implementing regulations have been enacted by sectoral ministries such as the Ministry of Industry and the Ministry of Energy and Mineral Resources, as well as regional governments. At the provincial level, the DKI Jakarta government has implemented DKI Jakarta Governor Regulation No. 38 of 2012 regarding Green Buildings, obliging new buildings with a floor area of more than 5,000 m^2 to adopt green building concepts and existing buildings to perform an energy audit every five years.

Protection of fresh water and seawater

6 How are fresh water and seawater, and their associated land, protected?

The treatment and use of fresh water and seawater are regulated mainly by Law No. 17 of 2019 concerning Water Resources, as amended by the Job Creation Law (Law 17/2019). According to article 5 of Law 17/2019, water resources are controlled (but not owned) by the state and used for the greatest prosperity of the community. This regulation signifies the state asserting a public authority to regulate and control water resources, but not owning them as property of the state. The state asserts its control by regulating the management and utilisation of water resources to ensure the people's rights to water usage, and also by issuing licences and exercising supervisory authority over the utilisation of water resources by business actors and third parties. According to article 7 of Law 17/2019, water resources cannot be owned or controlled by individuals, community groups or business entities. Under those terms, the central government or regional governments, in accordance with established norms, standards, procedures and criteria issued by the central government, are given the task and authority to regulate and manage water resources.

In issuing authorisations to business actors to utilise water resources, the government has a priority list based on purpose of usage. The top priorities for water usage are people's daily needs (religious,

sanitation, washing and other needs), farming and daily consumption through the provision of drinking water. When these basic needs have been fulfilled, business actors are allowed to use water, with non-business activities having a public purpose taking priority over business activities. A licence to utilise water resources for business activities may be granted to state-owned enterprises, regional government-owned enterprises, village-owned enterprises, cooperatives, private parties and individuals. The granting of a water resources utilisation licence for business purposes to private parties shall be carried out under certain and strict conditions under the principles of Law 17/2019 and as long as there is still available water. Law 17/2019 does not specifically set a limit on water source extraction, but the limit will be stipulated in each water utilisation licence, as applicable.

Water quality protection and management in connection with discharges into water resources is regulated by Government Regulation No. 22 of 2021 regarding Environmental Protection and Management (GR 22/2021). The Minister of Environment and Forestry, governors, regents or mayors shall prevent marine pollution or damage, or both, originating from land or sea. Under articles 246 and 247 of GR 22/2021, specific licences for dumping or wastewater disposal are required to carry out the otherwise prohibited action of marine waste disposal.

Protection of natural spaces and landscapes

7 What are the main features of the rules protecting natural spaces and landscapes?

Indonesian laws regulate the designation of certain protected spaces and landscapes in the context of protecting biological diversity. Under Law 5/1990, there are several types of protected natural spaces, including nature reserves, nature preserves, wildlife sanctuaries, biosphere reserves, national parks and forest parks. These conservation zones and areas are determined by scientific criteria such as native flora and fauna, natural conditions, special characteristics and conservation value, as regulated in Government Regulation No. 28 of 2011 regarding Management of Natural Reserves and Natural Conservation Areas, as amended by Government Regulation No. 108 of 2015 (GR 28/2011). GR 28/2011 further provides that these protected spaces may be subdivided into different blocks such as protection blocks and utilisation blocks. Specifically for national parks, designated areas include core zone and utilisation zone, which connote different levels of protection status.

Outside the scope of the above, the government of Indonesia does not specifically regulate the protection of natural spaces and landscapes. Land and spaces in Indonesia are classified into forestry areas and non-forestry areas. Forestry areas are under the jurisdiction of the MOEF and non-forestry areas are subject to the authority of the Ministry of Agrarian and Spatial Layout Affairs. Land titles for non-forestry areas may be granted to individuals and legal entities. Forestry areas are further categorised by the government into protected forest, conservation forest or productive forest, which have different levels of protection, as their names suggest. For non-forestry land, the newly enacted Government Regulation No. 18 of 2021 regarding Right to Manage, Land Titles, Multistory Housing Units and Land Registration, which concerns land titles (GR 18/2021), regulates that land title owners are obliged to preserve and maintain the sustainability of the environment, maintain the conservation function of any bodies of water or other conservation functions. For a specific land title, that is, *Hak Guna Usaha* or Right to Cultivate, GR 18/2021 regulates that any areas of high conservation value within *Hak Guna Usaha* land shall not be subject to exploitation and should be preserved. Although the language of these regulations concerning land titles may seem aspirational, the government may have the grounds to revoke a party's land rights for certain environmental violations pursuant to the regulatory provisions.

Protection of flora and fauna species

8 What are the main features of the rules protecting flora and fauna species?

Article 20 of Law 5/1990 states that flora and fauna species are classified into protected species and unprotected ones. Protected species are subdivided into two categories, namely: endangered flora and fauna close to extinction; and flora and fauna with rare populations. The list of protected flora and fauna species is included in the appendix of MOEF Regulation No. P.20/MENLHK/SETJEN/ KUM.1/6/2018 regarding Protected Flora and Fauna, as lastly amended by MOEF Regulation No. P.106/MENLHK/SETJEN/KUM.1/12/2018.

The law does not elucidate different protection status for 'protected species' of flora and fauna, but rather a general prohibition. Article 21(1) of Law 5/1990 regulates that any party shall be prohibited from cutting down, taking, owning, damaging, destroying, keeping, transporting and commercialising protected flora or its parts, either dead or alive. Protected fauna shall be protected from being captured, injured, killed, stored, owned, kept, transported or sold, dead or alive.

Noise, odours and vibrations

9 What are the main features of the rules governing noise, odours and vibrations?

Noise, odours and vibrations are regulated as 'nuisance' emissions and regulated as part of air pollution prevention. Pursuant to article 208 of GR 22/2021, every business or activity emitting nuisance into the air must undergo a nuisance test performed by a lab registered with the MOEF or personnel who have been certified by certification agencies. Similar to air emissions, the MOEF shall stipulate quality standards for nuisance (ie, the tolerable limit under which such nuisance can be emitted into the air).

Environmental quality standards for noise are regulated under MOEF Decree No. 48 of 1996 on Noise Quality Standards. This decree regulates the tolerable noise decibel levels for different designated areas. The details concerning noise levels are attached in its appendices, which consist of the Noise Quality Standard and Noise Level Measurement, Calculation and Evaluation. In the same vein, the vibration quality standards are regulated under MOEF Decree No. 49 of 1996 on Vibration Quality Standards. It regulates the tolerable threshold of vibrations based on possible damage, impact, safety and comfort, and shockwave level, and based on the type of building and other similar criteria for vibrations. Finally, odour quality standards are regulated under MOEF Decree No. 50 of 1996 on Odor Quality Standards, which provides maximum permissible odour content in the air that does not interfere with human health and environmental comfort, covering both odour of single odorant and odour of mixed odorants.

According to GR 22/2021, quality standards for nuisance emissions (vibrations, noise or odours) shall be formulated and stipulated by the MOEF. Under the above MOEF decrees pertaining to the quality standards for vibrations, noise and odours, the governor of each province has the right to determine stricter quality standards than those regulated in the decrees. If stricter standards are not regulated at the provincial level the provision in the appendixes of the MOEF decrees will apply. If the environmental impact assessment (AMDAL) for a business or activity requires that the quality standard be stricter than the provisions in the appendices to those decrees, the stricter standards under the environmental impact assessment will apply.

Liability for damage to the environment

10 | Is there a general regime on liability for environmental damage?

The Environment Law defines 'environmental damage' as a direct or indirect change to the physical, chemical or biological characteristics of the environment that exceeds the standard criteria for environmental damage. There are three potential liabilities due to unlawful actions causing environmental damage, namely civil liability, criminal liability and administrative sanctions, as follows.

Civil liability

Any qualified claimants (ie, community or environmental organisations, individuals and government institutions, both at the central and regional level) can file a civil lawsuit against any activities that have had an adverse impact on the environment. The Indonesian Environment Law adopts the principle of strict liability in respect of B3 Waste management. Pursuant to article 88 of the Environment Law, a party whose action, business or activity includes the use of hazardous and toxic material or B3 Waste; produces or manages B3 Waste; or poses a serious threat to the environment shall be held strictly liable for any resulting loss from damage to the environment without any requirement to prove fault.

Sub-paragraph (3) makes it clear that strict liability is imposed even if B3 Waste is not involved, if that party's 'action, business and/or activity' poses a serious threat to the environment. Therefore, based on article 88 of the Environment Law, any business that poses a serious threat to the environment shall be held strictly liable for the resulting loss without any requirement to prove fault.

Further, with respect to civil liability, the Environment Law stipulates that any person responsible for a business or activity that pollutes or damages the environment and that causes loss to a third party shall be liable to pay compensation or take remedial actions.

Criminal liability

Any person who causes environmental damage is subject to imprisonment and fines. The Environment Law defines the specific environmental damage and the corresponding duration of imprisonment and the amount of fines. For instance, any person who produces B3 Waste and does not conduct proper waste management is subject to imprisonment of one to three years and fines from one billion to three billion rupiah.

In addition to the Environment Law, other related laws (ie, the Forestry Law and the Natural Resources and Ecosystem Conservation Law) also regulate criminal provisions for any violations of the regulations thereof.

The Environment Law regulates corporate criminal liability. If the environmental crime is committed by, for or on behalf of a business entity, the criminal offence and penalty shall be imposed on the business entity or any person giving an order to engage in such criminal activity or any person acting as a leader in such crime.

Administrative liability

Any party who does not comply with the administrative obligations to conduct their business operations (eg, having the required licence or fulfilling the obligations under the licence) is subject to administrative sanctions in the form of a warning letter and coercive measures by the government (ie, temporary suspension of business activity, administrative fines, suspension of business licence or revocation of business licence).

Environmental taxes

11 | Is there any type of environmental tax?

An environmental tax is imposed under Government Regulation No. 46 of 2017 regarding environmental economic instruments, as last amended by GR 22/2021 (GR 46/2017), to provide incentives or disincentives for sustainable environmental actions. Under GR 46/2017, an environmental tax is imposed on the activities of extracting and using ground water, surface water, bird nests, non-metals and minerals, motor vehicle fuel and motor vehicles, and other activities that surpass the environmental impact criteria of natural resources depreciation, environmental pollution and environmental damage.

In addition to the foregoing, the government recently enacted Law No. 7 of 2021 regarding the harmonised tax law, which regulates a carbon tax on carbon emissions that have a negative impact on the environment.

Environmental reporting

12 | Are there any notable environmental reporting requirements (eg, regarding emissions, energy consumption or related environmental, social and governance (ESG) reporting obligations)?

Under the Environment Law and GR 22/2021, every business licence holder, who presumably will already have completed and obtained their environmental approval, shall be obliged to periodically report to the MOEF, governor, regent or mayor with regard to its environmental requirements or obligations related to its environmental approval. The specific content and contours of the reporting obligation may differ from one party to another, noting that the environmental approval for different types of business activities may result in different obligations and fulfillments. Similar to the above, there also may be additional reporting requirements under separate regulations, such as GR 70/2009, which mandates users with energy consumption equal to or more than 6,000 tonnes of oil equivalent to conserve energy through 'energy management', which includes regular energy audits conducted by an internal auditor or an accredited body certified by the Ministry of Energy and Mineral Resources.

As for ESG standards, we understand that compliance by Indonesian companies has been more voluntary in nature, in the absence of specific laws obliging ESG practices. But certainly, awareness of ESG practices and principles has risen in the past few years, presumably because they are attractive to both foreign and domestic investors.

Government policy

13 | How would you describe the general government policy for environmental issues? How are environmental policy objectives influencing the legislative agenda?

The current government policy for environmental issues in Indonesia has its primary focus on increasing the ease of doing business by streamlining environmental approval requirements and documents, whose progress has been manifested in the amendment to the Environment Law by the Job Creation Law, along with the issuance of implementing regulations. Another main focus of the Indonesian government is to reduce greenhouse gas emissions, particularly due to Indonesia's international commitment under the Paris Agreement to reduce its greenhouse gas emissions by 29 per cent (41 per cent with international support) by 2030, by various efforts in the forestry, energy, waste and other sectors. Overall, the government's stance on environmental issues can be described as trying to balance environmental conservation on one hand and the ease of doing business and development on the other hand.

HAZARDOUS ACTIVITIES AND SUBSTANCES

Regulation of hazardous activities

14 | Are there specific rules governing hazardous activities?

Yes, anyone who engages in hazardous activities as well as uses or produces hazardous substances is required to conduct waste management and obtain a waste-related licence for each waste-related activity (eg, storage, collection, transportation, utilisation, processing, landfilling and dumping of B3 Waste). Each activity thereof will require a different technical environmental licence, referred to as a Technical Approval and/or Operational Feasibility Letter. The technical environmental licence is in addition to the environmental assessments (ie, AMDAL, Environmental Management and Monitoring Measures or Statement of Environmental Monitoring and management) each business is required to obtain.

Waste management companies whose main activities are to collect, treat, or manage waste sourced from other industries will be required to obtain an additional waste management business licence.

Regulation of hazardous products and substances

15 | What are the main features of the rules governing hazardous products and substances?

Hazardous substances are regulated by Government Regulation No. 74 of 2001 on the Management of Hazardous and Toxic Substances (GR 74/2001). This regulation defines hazardous substances as substances that, due to their properties, concentration or amount, whether directly or indirectly, may pollute or damage the environment, or may endanger the environment, health, human survival and other living organisms. There is no specific definition of 'hazardous product' under Indonesian law.

Generally, a product is categorised as a 'hazardous product' if it contains hazardous ingredients. Article 5 of GR 74/2001 classifies hazardous substances as follows:

- explosive;
- oxidising;
- extremely flammable;
- highly flammable;
- flammable;
- extremely toxic;
- highly toxic;
- moderately toxic;
- harmful;
- corrosive;
- irritant;
- dangerous to the environment;
- carcinogenic
- teratogenic; or
- mutagenic.

Hazardous substances are further divided into three categories, namely hazardous substances that may be utilised, are of limited usage, or are banned. There are different treatments for hazardous substances according to their categorisation.

As the name suggests, banned hazardous substances are prohibited from being imported and used. Substances in the 'usable' or 'limited usage' category may be available for import or use subject to the fulfilment of certain requirements. GR 74/2001 requires any person or company that produces or imports hazardous substances into the territory of the Republic of Indonesia for the first time to submit an application for the registration of the substances with the Directorate General of Hazardous Substances, which is under the auspices of the Ministry of Environment and Forestry (MOEF). Registration of hazardous substances is required for usable hazardous substances and limited use hazardous substances (article 6 of GR 74/2001). Further information on the registration and notification procedure is set out in MOEF Regulation No. 36 of 2017 on Registration and Notification Procedures for Hazardous and Toxic Substances.

Restrictions or prohibitions on the use of hazardous substances exist for specific products or substances, such as fertilisers, polychlorinated biphenyls (PCBs) and mercury. For instance, Minister of Agriculture (MOA) Regulation No. 43 of 2019 concerning Pesticides Registration (MOA Reg 43/2019) stipulates that pesticides can be classified based on their hazard level, which are further divided into prohibited and non-prohibited hazardous pesticides. Prohibited pesticides cannot be used as determined by their active ingredients or additives or based on test results. The prohibitions and standard tests also refer to international criteria such as those set out by the Food and Agriculture Organization, the International Agency for Research on Cancer, the World Health Organization Joint Meeting on Pesticide Residues and the Stockholm Convention (article 10(2) of MOA Reg 43/2019).

Both PCBs and mercury are classified as hazardous and toxic substances that must be reduced or eliminated. There is no applicable regulation to make these marketable. Provisions related to PCBs and mercury are contained in MOEF Regulation No. P.29/MENLHK/SETJEN/PLB.3/12/2020 of 2020 regarding the Management of Polychlorinated Biphenyls and Presidential Regulation No. 21 of 2019 on the National Action Plan for Mercury Reduction and Elimination, respectively.

Another obligation applicable to products containing hazardous chemicals is regulated in Minister of Industry (MOI) Regulation No. 87/M-IND/PER/9/2009 of 2009 regarding the Globally Harmonized System of Classification and Labeling of Chemicals, as amended by MOI Regulation No. 23/M-IND/PER/4/2013 of 2013 (MOI Reg 87/2009). MOI Reg 87/2009 regulates the application of the Globally Harmonized System of Classification and Labeling of Chemicals (GHS) on the labels and Material Safety Data Sheets (MSDS) of products. MOI Reg 87/2009, along with GR 74/2001, essentially obliges business actors that produce hazardous chemical substances to label these products and to create MSDS for their chemicals. These obligations are especially relevant for chemical manufacturing companies that produce plastic, cement or other products derived from chemical substances.

Industrial accidents

16 | What are the regulatory requirements regarding the prevention of industrial accidents?

The principal regulatory requirements for the prevention of industrial accidents are contained in Law No. 1 of 1970 on Occupational Safety (Occupational Safety Law). First, an employer is obliged to inspect the physique, mental condition and physical capability of employees pursuant to the type of occupation and industry standards, which may be under sector-specific regulations.

In addition to the Occupational Safety Law, each industry will usually have its own regulations on the prevention of industrial accidents. For instance, the oil and gas industry has specific guidelines from SKK Migas on coordination and communication in emergency situations. In another example, the Ministry of Industry's regulations on the chemical industry require safety procedures related to chemical substances and hazard labelling.

A workplace manager is further obliged to show and explain to every new employee:

- possible hazards in the work environment;
- every piece of safety and protective equipment obligatory in the work environment;
- personal protective equipment; and
- safety methods and attitude in conducting work.

A workplace manager is also obliged to comply with all terms and conditions applicable depending on the type of work and the work area. Under the Occupational Safety Law, a workplace manager is also required to:

- ensure all occupational safety requirements are placed in easily visible locations and are legible, according to the directions of the occupational safety expert or employee supervisor;
- display easily understood posters of occupational safety obligations and all other guidance materials in easily visible places, according to the directions of the occupational safety expert or employee supervisor; and
- provide (without cost) all personal protective equipment required for all employees and for individuals entering the work area, as well as necessary signs according to the directions of the occupational safety expert or employee supervisor.

ENVIRONMENTAL ASPECTS IN TRANSACTIONS AND PUBLIC PROCUREMENT

Environmental aspects in M&A transactions

17 What are the main environmental aspects to consider in M&A transactions?

Typically, the main environmental aspect to consider in the context of a share acquisition is to assess the necessary environmental documents of the target company. The key is to identify the required environmental permits and related licences in reference to the target company's business activities. For instance, a chemical company or a construction company will be subject to more strenuous environmental licensing requirements than a clothing wholesale or retail company. It also is necessary to assess if waste management licences are required, such as for dumping, transporting or storing B3 or non-B3 Waste. Such requisite licences will need to be identified during the due diligence stage. If the target company's requisite licences have not yet been issued or already have expired, certain representations and warranties on the non-existence of governmental sanctions and further covenants to obtain such licences will usually be required.

For the acquisition of assets, the main environmental concerns will depend on the type of asset being acquired. Buyers will have to check whether the target asset, for example, land, building or concessions, is subject to certain environmental standards and whether those standards have been met. For example, if the target asset is a building, the buyer will want to determine if the building is required to have a certain amount of green open space, and if so whether that requirement has been fulfilled. To use another example, if the asset is a manufacturing factory, a more strenuous environmental site assessment will be needed to ensure there is no on-site contamination. In such an asset acquisition, buyers will also need to check if there are any outstanding environmental liabilities.

Environmental aspects in other transactions

18 What are the main environmental aspects to consider in other transactions?

For IPOs, the main environmental aspect is similar to that of a share acquisition. The company must disclose its environmental permits or licences (if any and as applicable) as part of its prospectus, which will then be submitted to the Indonesian Financial Services Authority as a part of the IPO process and subject to public scrutiny. Usually, companies planning a public offering obtain a legal opinion on whether there are any material issues, including related to their environmental permits or documents.

For financing transactions, while lenders do not specifically scrutinise the environmental documents of borrowers, they will usually seek a covenant that borrowers will continue to do business as usual with due authorisation and no material changes. Indirectly, the borrowing company must maintain its proper business and environmental licences to maintain compliance with the facility agreement.

As for real-estate transactions and bankruptcy proceedings or similar debt payment suspension proceedings, there is no generally applicable environmental aspect that is material to consider.

Environmental aspects in public procurement

19 Is environmental protection taken into consideration by public procurement regulations?

Yes, there may be a criterion for awarding contracts, for instance as tender qualification. Presidential Regulation No. 16 of 2018 regarding Procurement of Goods/Services by the government, amended by Presidential Regulation No. 12 of 2021, provides a normative foundation that the government procurement of goods or services shall need to pay attention to environmental aspects, 'including reducing negative impacts to health, air, soil and water quality, and utilising resources in accordance with the laws and regulations'. Specific qualification standards or prerequisites (including environmental protection and management) may be imposed by the particular governmental institution as the procuring entity. Also, public procurement rules applicable to state-owned entities (SOEs) also provide that each SOE board of directors may determine its own procedures for the procurement of goods or services.

ENVIRONMENTAL ASSESSMENT

Activities subject to environmental assessment

20 Which types of activities are subject to environmental assessment?

As a rule of thumb, business activities associated with different risk levels are subject to different types and degrees of environmental assessment. Based on the Environment Law and its implementing Ministry of Environment and Forestry (MOEF) regulations, any planned business or activity likely to have a 'significant impact' is required to have an AMDAL. On a milder level, businesses or activities with a less significant impact on the environment are required to have a UKL-UPL. And businesses with a far lower risk are required only to have a self-declaring statement on their ability to conduct environmental monitoring and management (SPPL) as their environmental assessment.

To implement the above rule, the MOEF recently stipulated a list of business activities that are obliged to have an AMDAL or Environmental Management and Monitoring Measures (UKL-UPL), under MOEF Regulation No. 4 of 2021. The list of businesses or activities requiring an AMDAL includes not only businesses of an industrial nature, but also 'high-risk' ones such as construction, metal refinery, petrochemical, power plant operations, mining and forestry, as well as non-business activities such as river water extraction, reclamation, dredging and others. The complete list of businesses and activities subject to the AMDAL or UKL-UPL requirement can be found in the appendices of MOEF Regulation No. 4 of 2021. Currently, businesses or activities that do not require an AMDAL or UKL-UPL require an SPPL.

An AMDAL, UKL-UPL or SPPL does not in itself act as a licence. Rather, they are a prerequisite step to obtaining the environmental approval that is an integral part of a business licensing application.

Environmental assessment process

21 | What are the main steps of the environmental assessment process?

There are three types of environmental assessments (AMDAL, UKL-UPL and SPPL), which depend on the degree of risk associated with the relevant business activity. The process for each type of environmental assessment is also different, with AMDAL having the most elaborate process.

The main steps in an AMDAL assessment involve the preparation of the environmental assessment document, public consultation, assessment by the authorities, including any revisions, and finally the issuance of a clearance in the form of an 'environmental approval,' which is an integral document for a company to obtain its business licensing. These processes are now governed by GR 22/2021.

For an AMDAL, the process begins with the preparation of the AMDAL document (consisting of a framework form, environmental impact analysis and environmental monitoring and management measures), which can be done by the business applicant itself or outsourced to a certified environmental consultant. During this stage, involvement of the community is mandated, which can be done through an announcement and public consultation initiated by the applicant.

According to GR 22/2021, the 'directly impacted' community can only submit their input or comments on the business plan within 10 business days after the public announcement. Subsequently, the MOEF, coordinating with the relevant ministry or ministries that have authority over the applicant's business sector, shall provide a Framework Form for the applicant to complete (via the environmental document information system or manually). The drafting of the AMDAL will follow the guidance in the provided Framework Form. Under GR 22/2021 there are three types of AMDAL (category A, B and C, depending on the complexity and nature of the business concerned). It further regulates the time limit for the preparation of the AMDAL document (180 days for type A AMDAL, 120 days for type B and 60 days for type C). However, the applicant may apply to the MOEF, governor, mayor or regent for an extension of these deadlines.

The AMDAL document is then submitted to the MOEF, governor, mayor or regent, along with additional technical licences such as compliance with water pollution quality standards, traffic impact analysis or other licences related to B3 and non-B3 Waste, as may be applicable, to obtain Environmental Approval. Indonesia's reformed business licensing system now integrates any additional environmental-related licensing into the AMDAL assessment process. Before the introduction of risk-based licensing, the AMDAL environmental assessment to obtain environmental approval was a standalone process, and business actors would sometimes also have to obtain additional technical environmental licences (eg, waste storage, transportation or dumping). Now, the environmental licensing processes have been streamlined into a single process to obtain Environmental Approval.

The AMDAL will be assessed by the MOEF, governor, regent or mayor through an environmental worthiness assessment team (Team). At each level, the Team, after its assessment, shall convey its recommendation to the MOEF, governor, regent or mayor, which will later serve as the basis for the respective authority to issue an Environmental Approval for the business applicant. The authority to issue an Environmental Approval is parallel to the issuing authority for the relevant business licensing. For instance, if the applicant's business activity licence is subject to the governor's authority, the Environmental Approval shall also be subject to the governor's authority.

Pursuant to GR 22/2021, this assessment process must take place within 50 business days of the submitted application being deemed completed. This timeframe is inclusive of further revisions that may be requested during the assessment process by the authorities. However, given how recently this regulation was issued, we have not yet seen whether this provision is strictly implemented.

Finally, the MOEF, governor, regent or mayor will issue the Environmental Approval, which will also be made public through an environment information system that the MOEF reportedly plans to put in place but at the time of writing is still unavailable, or through the mass media. This shall be done within five working days of the Environmental Approval issuance.

The UKL-UPL process is generally the same as with the AMDAL, involving the preparation of a form and analysis and documentation of environmental management and protection efforts, which are then assessed by the relevant authorities (ie, the MOEF, governor, regent or mayor), with an Environmental Approval issued following a successful assessment.

The SPPL process is much simpler, requiring only a self-declaration by the application of its willingness and capability to manage and protect the environment. The SPPL is integrated directly into a company's business identification number.

REGULATORY AUTHORITIES

Regulatory authorities

22 | Which authorities are responsible for the environment and what is the scope of each regulator's authority?

The Environment Law confers authority to both the central government (ie, the MOEF) and regional governments (governors, regents or mayors) in protecting and managing the environment and ensuring the compliance of businesses with environmental standards. Depending on the type of environmental approval or business licensing, either the MOEF or governors, regents or mayors will issue the licence based on the division of authority stated in the regulations.

As for the authority to issue administrative sanctions, the general rule is that sanctions are imposed by the issuing authority of the respective environmental approval or business licensing. For instance, the MOEF will issue sanctions related to environmental approvals that it issued, and governors will issue sanctions for approvals they issued. Nonetheless, the Environment Law also provides that in certain instances, the MOEF may 'step in' and take over the authority of the regional government if it deems that there has been a serious violation by a business actor whose licensing was issued by the regional government.

Aside from the MOEF and regional government officials, there are also sector-specific institutions such as the MOEF-formed Security and Law Enforcement Unit for the Environment and Forests, set up to combat interference, threats, and violations of environmental and forestry law; the Environmental Funds Management Agency, responsible for managing funding and economic instruments related to environmental protection and management; the National Water Resources Agency, which formulates policies and strategies for water resource management and provides considerations and evaluations for river areas and groundwater basins; and the AMDAL Appraisal Commission, which is responsible for appraising environmental documents and providing input to ensure the environmental feasibility of business activities. There also are independent government agencies (outside the MOEF) overseeing other specific sectors (eg, the Peatland Restoration Agency, which is mandated to rehabilitate peatlands in Indonesia).

Investigation

23 | What are the typical steps in an investigation?

In cases of environmental crimes, the Environment Law stipulates that the police and civil servant investigators in charge of environmental

protection may be authorised to conduct investigations. For instance, the Security and Law Enforcement Unit for the Environment and Forests (a specific unit under the Directorate General on Environment and Forestry Law Enforcement under the auspices of the MOEF), may be given the authority to, among other actions, conduct investigations related to environmental violations, supervise, evaluate and report on forestry or environmental licences. Under the mandate of the Environment Law, the scope of powers granted is quite wide, including collecting preliminary evidence to clarify the existence of a legal event and form the basis for further examination. Authorities are also then able to carry out interrogations, examine records and documents, inspect places, seize materials and goods, conduct searches, seek assistance from specialists, and arrest and detain suspected perpetrators. In exercising such powers, the civil servant investigators would work alongside officers of the Indonesian National Police Force.

Administrative decisions

24 | What is the procedure for making administrative decisions?

State administrative decisions may be in the form of permits, orders, prohibitions and dispensations. The MOEF, governors, regents or mayors, and environmental agencies at the regency or municipal level are authorised to issue administrative decisions in the environmental sector, based on their exercise of discretion. Applications for environmental approvals may be submitted to the relevant state administrative official depending on the location of the business. The requirements differ depending on the type of environmental approval.

The process of assessing environmental documents as part of the environmental approval decision-making process also involves public consultations and evaluations by the authorities. Therefore, project proponents or elements of the public do have a right to be heard during the decision-making stage, particularly for environmental approvals. In other instances, such as the imposition of administrative sanctions, the authorities will usually issue a warning letter (usually three times), in response to which the relevant party may submit a reply or explanation. However, in more severe cases, the law provides that the MOEF has the right to directly impose more stringent sanctions without prior warning (eg, revocation of licence or imposition of administrative fines).

Sanctions and remedies

25 | What are the sanctions and remedies that may be imposed by the regulator for violations?

The Environment Law stipulates different sanctions for different violations, ranging from administrative sanctions to criminal sanctions and civil liability, to be proven within and outside court proceedings.

For violations related to the Environmental Approval and business licensing, the central or regional government (through the MOEF, provincial, regency and municipal governments) may impose administrative sanctions. These sanctions range from written warnings to coercive actions (ie, suspension of production or business activities, cessation of production facilities, closure of wastewater or emission disposal tunnels, confiscation of goods that may lead to environmental violations, demolition) and suspension or revocation of business licensing. The court may also oblige the parties to recover or remediate (if possible) the damages caused to the environment.

Appeal of regulators' decisions

26 | To what extent may decisions of the regulators be appealed, and to whom?

The current, amended version of the Environment Law no longer provides explicit provisions on the right of appeal for decisions on Environmental Approvals. However, as stipulated by Law No. 5 of 1986 regarding Administrative Court Proceedings, decisions issued by state administrative officials that are concrete, individual and final may be subject to administrative court review, for instance, due to formality irregularities or maladministration.

JUDICIAL PROCEEDINGS

Judicial proceedings

27 | Are environmental law proceedings in court civil, criminal or both?

Environmental law proceedings can be in both civil and criminal courts. Disputes relating to class actions, litigating rights of environmental organisations or litigating rights of the government may be settled in civil courts. Offences related to violations of environmental quality standards and corporate crime may be brought to criminal court. Decisions by state administrative officials can also be challenged in administrative courts.

Powers of courts

28 | What are the powers of courts in relation to infringements of environmental law?

The courts of general jurisdiction have the authority to examine, adjudge and decide both criminal and civil law cases. The courts have the power to decide which party is liable for damage and the method of punishment and the appropriate compensation for the loss and environmental damage. They may also determine the payment of coercive money for each day of delay in the execution of court decisions.

Civil claims

29 | Are civil claims allowed regarding infringements of environmental law?

Yes. This is provided in the Environment Law. Recently, the Central Jakarta District Court granted a lawsuit filed by a group of DKI Jakarta citizens who sued the government based on unlawful action (a non-contractual basis, similar to tort under Common Law) for the failure of the government to maintain clean air in the Indonesian capital.

In addition, as regulated in Decree of the Chief Justice of the Supreme Court No. 134/KMA/SK/IX/2011 on Environmental Judge Certification, environmental claims include civil violations in the field of environmental management, which includes but is not limited to the fields of forestry, plantations, mining, coastal and marine environment, spatial planning, water resources, energy, industry and natural resource conservation.

Defences and indemnities

30 | What defences or indemnities are available?

The Environment Law provides a strict liability provision that applies to parties involved in business or activities using, producing or managing B3 Waste or activities that cause serious threat to the environment. They could be held entirely liable for any damages incurred without the plaintiff needing to prove that the other party is at fault. The official elucidation of article 88 of the Environment Law provides that strict liability thereunder does not require a plaintiff to prove the element of 'guilt' or 'fault'.

For other types of business activities, general principles of civil liability and damages shall apply. Allocation of liability, several and joint liability among the wrongful parties are also possible based on general civil and civil procedural law principles and basis of claims (ie, unlawful

action or tort). The Environment Law also contains a provision that liable parties who committed tort may also be ordered by the court to conduct certain remedial actions other than paying for damages. The court may also fix an amount of enforcement money, which is a daily imposed fine for failure to implement the court's order.

The Environment Law does not regulate a different statute of limitation other than the general provision under the Indonesian Civil Code, which is 30 years. However, such statute of limitation is not applicable to environmental pollution or damage attributable to a business activity that uses, produces or manages B3 Waste.

In terms of limitation of liability, the MOEF enacted MOEF Regulation No. 7 of 2014 regarding Compensation for Contamination and/or Damages to the Environment as a guideline for calculating compensation and remedial action in environmental damage cases. In theory, the amount of liability may increase due to the calculation of externalities in environmental damages, taking into account the irreversible nature of the damage, social costs to the communities affected and the degree and duration of damage.

In civil proceedings, a defence of force majeure may be applicable in exempting oneself from liability. Based on article 501(5) of GR 22/2021, a person may be relieved of strict liability if the environmental damage is caused by any of natural disaster or war; force majeure beyond human capabilities; or result of other polluting or damaging parties. Based on publicly available information, the infamous Sidoarjo mud flow, in Indonesia's East Java province, is an example of a natural gas drilling accident case that was not punishable because the House of Representatives and the Supreme Court found that the incident was a natural disaster and did not meet the provisions for such disaster to be recognised as a criminal act pursuant to article 116(1) of the Environment Law.

Directors' or officers' defences

31 | Are there specific defences in the case of directors' or officers' liability?

The Environment Law provides that when an environmental crime is committed by, for or on behalf of a corporation, criminal prosecutions and sanctions can be imposed on the corporation or the person who gave the order or acted as the leader of the crime. If the crime was carried out by a person within the scope of their employment, criminal sanction shall be given to the person who gave the order or led the crime, regardless of whether the crime was committed together or individually. The Environment Law also refers to the perpetrator of a corporate crime as a 'functional perpetrator'. The elucidation states that prosecution should be aimed at the leader of the corporation who authorised and accepted the crime. Sanctions for individuals can come in the form of imprisonment and fines, and additional penalties can be imposed on the corporation.

Looking at past cases in Indonesia, the courts appear to be inclined to shift liability from corporations to individuals acting as corporate officers. In *Republic of Indonesia v PT Adei Plantation & Industry* (PT API), the court found that PT API was guilty and liable for environmental crimes. The court also stated that if PT API did not pay the fine, then the director, even if he was not a defendant, should be imprisoned for five months in exchange. In *Republic of Indonesia v Kosman Siboro*, although the court said they were unsure of the director's role in the crime, they still found him liable due to his position as director of the corporation. In specific cases, the director of a company that specialises in handling environmental, health and safety (EHS) matters can usually use the defence that they took all prudent and necessary actions and thus cannot be sued personally due to having acted as a prudent director under the Indonesian Company Law. If a director commits gross negligence or wilful misconduct that causes environmental harm, they may then be personally liable for the resulting damage, for instance, due to failure to comply with the standards and operational procedures related to EHS. There are past court cases where a company failed to obtain the necessary B3 Waste licensing for its business activities, which was then brought to court but it was the director who was sentenced.

Appeal process

32 | What is the appeal process from trials?

The Indonesian court system comprises district courts at the first instance, high courts for appeal and the Supreme Court for cassation. Parties can appeal district court decisions 14 days after the date of the decision, and appeals cannot be filed against final and binding decisions. Then, the high court decision can be further appealed to the Supreme Court. The decision of the Supreme Court is mostly binding but can be brought to further judicial review in some instances.

INTERNATIONAL TREATIES AND INSTITUTIONS

International treaties

33 | Is your country a contracting state to any international environmental treaties, or similar agreements?

Indonesia has ratified several international environmental agreements, such as the Convention on Biological Diversity (CBD), the United Nations Convention to Combat Desertification, the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), Basel Convention on the Control of Transboundary Movements of Hazardous Wastes, the United Nations Convention on the Law of the Sea, Comprehensive Nuclear-Test-Ban Treaty, Vienna Convention on the Protection of the Ozone Layer, International Convention for the Prevention of Pollution from Ships, International Tropical Timber Agreement, and the Ramsar Convention on Wetlands of International Importance Especially as Waterfowl Habitat.

International treaties and regulatory policy

34 | To what extent is regulatory policy affected by these treaties?

Indonesia has adopted the various treaties into its national laws. For instance, Indonesia ratified the CBD through Law No. 5 of 1994 and created bodies such as the Biodiversity Action Plan for Indonesia and the Indonesian Biodiversity Strategy and Action Plan to pursue CBD goals in biological diversity, sustainable use and equitable sharing of benefits of genetic resources.

In another example, after Indonesia's ratification of CITES in 1978, Indonesia enacted Law No. 5 of 1990 on Conservation of Natural Resources and Their Ecosystems and implemented regulations for the convention. The regulations implemented licensing systems for species listed in CITES and the MOEF and the Ministry of Maritime Affairs and Fisheries have been appointed as national authorities.

UPDATE AND TRENDS

Key developments of the past year

35 | Are there any emerging trends or hot topics in environment law in your jurisdiction?

The Job Creation Law's amendment of the Environment Law, along with the changes it introduced in the form of the new risk-based business licensing system, has been the hot topic in environmental law in Indonesia.

Notable changes include lessened community involvement in the context of the environmental impact assessment (AMDAL) drafting and preparation stage, with the amended Environment Law limiting the

involvement of the community to those 'directly impacted' by a proposed business activity. This is a significant change from the previous definition of community, which included not only affected persons and communities, but also environmental activists and other parties affected by all types of decisions in the AMDAL process.

Another significant change was the revocation of a provision that allowed the cancellation of a company's environmental permit through a state administrative court lawsuit. GR 22/2021, an implementing regulation for the Environment Law, has also sparked debate, particularly its amendments on waste management. Three types of waste (fly ash, bottom ash and spent bleaching earth) were delisted from the B3 Waste category and are now categorised as non-B3 Waste. Some parties have raised the concern that this decision could be a setback to proper waste management and public health.

Looking past possible controversies and setbacks, positive trends include the simplification and streamlining of certain required environmental documents under the risk-based licensing approach. For instance, low-risk businesses shall no longer require a separate environmental document, which is now directly integrated into their Business Identification Number. This change will especially benefit micro, small and medium-sized enterprises. Businesses that engage in activities classified as medium to high risk for the environment still require an environmental monitoring and management efforts document (UKL-UPL) or an AMDAL, depending on the type of business and how it is regulated.

Aside from the Environment Law reform and the streamlining of business licensing, a topic of much discussion in the third quarter of 2021 was the recent victory in a lawsuit filed by a group of DKI Jakarta citizens, who sued the Indonesian President, the governor of DKI Jakarta and several ministers over air pollution in DKI Jakarta. The Central Jakarta District Court found that five public officials had committed an unlawful action and were at fault over air pollution in the Indonesian capital. The five public officials who were found guilty to have committed such unlawful action are Indonesian President Joko Widodo, DKI Jakarta Governor Anies Baswedan, Minister of Health Budi Gunadi Sadikin, Minister of Home Affairs Tito Karnavian and Minister of the Environment and Forestry Siti Nurbaya.

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LEGISLATION

Main environmental regulations

1 | What are the main statutes and regulations relating to the environment?

The main legislation is the Environment Protection Act (EPA) (Chapter 549 of the Laws of Malta), with the various aspects of environmental law regulated by the Act's subsidiary legislation.

Integrated pollution prevention and control

2 | Is there a system of integrated control of pollution?

As an EU member state, Malta has implemented the IPPC regime through the Industrial Emissions (Integrated Pollution Prevention and Control (IPPC)) Regulations (SL549.77), which aim to prevent, reduce and control pollution from various point sources and set out principles for the permitting and control of industrial installations based on an integrated approach and the best available techniques (BAT).

The Regulations oblige operators of installations set out Schedule 1 (such as energy plants and chemical and metal manufacturing plants) to obtain permits from the competent authority. Such permits would generally contain, among other details, a description of the installation, materials and energy used and generated, the sources and nature of foreseeable emissions as well as the measures planned to monitor such emissions. When determining whether to grant the permit, the competent authority adopts an 'integrated' approach and considers:

- the whole environmental performance of the installation;
- any potential impacts on human health; and
- the capability and suitability of the applicant to undertake the proposed activity.

To control and minimise pollution from the installation, the permit will establish pollution standards, namely emission limits set by the competent authority on the basis of BAT. The permit would also impose monitoring obligations on the operator, who must provide certain data to the authority, at regular intervals, enabling it to check the operator's compliance with emission levels and other permit conditions. Additionally, where activities involve hazardous substances which may contaminate the soil or groundwater, the operator will be required to prepare a baseline report concerning the status of the soil and groundwater so that if significant pollution occurs over time, the operator would, after cessation of the activity, be obliged to return the site to the state defined in the baseline report.

Soil pollution

3 | What are the main characteristics of the rules applicable to soil pollution?

There are no specific rules governing soil pollution. Liability for soil pollution would be governed by general principles of civil law, and by the Prevention and Remedying of Environmental Damage Regulations (SL549.97), which address all types of environmental damage.

Under general civil law principles, liability would be shared between the responsible parties, with each party bearing responsibility for the damage caused by that party's actions. Additionally, where two or more persons cause damage maliciously, those persons shall be jointly and severally liable for the damage.

Liability under the Prevention and Remedying of Environmental Damage Regulations is based on the 'polluter pays' principle. The Regulations apply to two categories of environmental harm:

- damage caused by certain defined occupational activities (eg, operation of a power plant) and to imminent threats of such damage occurring by way of those activities; and
- damage to protected species and habitats caused by any occupational activities, but only where the operator is at fault or negligent.

Regulation of waste

4 | What types of waste are regulated and how?

The main legislation governing waste comprises the EPA, the Waste Regulations (SL549.63) and the Waste Management (Activity Registration) Regulations (SL549.45).

The EPA defines 'waste' as 'any thing, substance or object which the holder discards or intends to discard, or is required to keep in order to discard…', and requires the competent authorities to ensure that waste is managed in a sustainable manner and that its reduction, proper use, reuse and recovery is promoted.

The Waste Regulations also define 'waste' as 'any substance or object which the holder discards or intends or is required to discard'.

The above definitions illustrate that the term is relatively wide and could give rise to uncertainty as to what waste constitutes exactly. Notwithstanding this, the Waste Regulations specify that by-products, which are substances or objects resulting from production processes, are not regarded as waste, as long as the following conditions are met:

- further use of the substance or object is certain;
- the substance or object can be used directly without any further processing other than normal industrial practice;
- the substance or object is produced as an integral part of a production process; and
- further use is lawful, in other words, the substance or object fulfils all relevant product, environment and health protection requirements for the specific use and will not lead to overall adverse environmental or human health impacts.

In terms of the EPA, the minister responsible for the environment may, with regard to waste management, classify waste and prescribe rules in relation thereto.

The Code of Police Laws (Chapter 10) prohibits all persons from throwing or dumping refuse or rubbish in any place, and from accumulating rubbish and refuse, dirty, polluted or stagnant water, sewage and other foul matter. Any person found guilty of breaching the above will be liable on conviction to a fine.

The remainder of the waste legislation mainly concerns waste management. Under the Waste Regulations (SL549.63) permits from the competent authority are required by any person wishing to carry out any waste management activity, and in some cases by producers of waste intending to store or dispose of, on site, the waste it produces.

Packaging waste is dealt with in the Waste Management (Packaging and Packaging Waste) Regulations (SL549.43), which oblige producers of packaging waste to collect, recover and recycle such waste.

Regulation of air emissions

5 What are the main features of the rules governing air emissions?

The main environmental legislation regulating air emissions are the Industrial Emissions (IPPC) Regulations and the Ambient Air Quality Regulations (SL549.59). The latter impose certain obligations on the competent authority with respect to implementation, monitoring and control. More specifically, the authority must, among other things, establish limit values and alert thresholds for ambient air, carry out assessments of ambient air quality, and implement measures in zones where levels are higher than the limit value. Air discharges from industrial activities are also regulated by the permit itself, which will typically contain pollutant specific emission limit values based on the best available techniques.

The IPPC regime covers emissions from large combustion plants by means of the Industrial Emissions (Large Combustion Plants) Regulations (Subsidiary Legislation 549.78). The Regulations provide for the limitation of atmospheric emissions from large combustion plants having a total rated thermal input equal to or greater than 50 MWth, irrespective of the type of fuel used.

The energy efficiency of buildings is regulated by the Energy Performance of Buildings Regulations (SL623.01). The Regulations promote the improvement of the energy performance of buildings within the territory of Malta, taking into account outdoor climatic and local conditions, as well as indoor climate requirements and cost-effectiveness. They also establish a methodology for, among other things, calculating the integrated energy performance of buildings and building units, the issuance of energy performance certifications and the regular inspection of heating and cooling systems in buildings.

The carrying out of energy audits is highly encouraged for private households, and is mandatory for companies (other than SMEs) registered and doing business in Malta. Energy audits are regulated by the Energy Efficiency Regulations (Subsidiary Legislation 623.07) and the minimum criteria for carrying out such audits are set out in the fifth Schedule. The Regulations impose obligations on the minister responsible for energy to:

- promote the availability of high-quality energy audits to final customers, and for this purpose, the minister is required to establish transparent and non-discriminatory minimum criteria for such energy audits in accordance with the Regulations;
- encourage small and medium-sized enterprises to undergo energy audits, and the subsequent implementation of the recommendations; and
- raise awareness among households about the benefits of energy audits through appropriate advice services.

Protection of fresh water and seawater

6 How are fresh water and seawater, and their associated land, protected?

Fresh water is protected under the Protection of Groundwater against Pollution and Deterioration Regulations (SL549.53) and the Pollution Caused by Certain Dangerous Substances Discharged into the Aquatic Environment Regulations (SL549.10). These Regulations are both preventative and remedial in nature and essentially tackle pollution of groundwater from point as well as diffuse sources as they regulate direct and indirect discharges. Additionally, pollution caused to groundwater by nitrates from agricultural sources is also regulated under Maltese law. Contamination of fresh water sources by any person will give rise to criminal liability.

Extraction, whether for private or public use, is subject to strict controls and permitting requirements by the competent authority. The filling of pools is also regulated and must be done with fresh water to avoid harmful leakage of seawater into the groundwater.

The Water Policy Framework Regulations (SL549.100) establish an action plan for protecting inland waters, coastal waters and groundwater. These regulations attempt to adopt a holistic approach with respect to the entire field of water management. Essentially, the aim is to promote sustainable water use based on the long-term protection of available water resources; and to enhance the protection and improvement of the aquatic environment, through specific measures for the progressive reduction and phasing out of discharges, emissions and losses of hazardous substances.

Protection of natural spaces and landscapes

7 What are the main features of the rules protecting natural spaces and landscapes?

Over 20 per cent of Malta's land area has protection status under the EU's Birds and Habitats Directives. Moreover, several sites have been designated as special areas of conservation under the Flora, Fauna and Natural Habitats Protection Regulations (Subsidiary Legislation 549.44) and as special protection areas under the Conservation of Wild Birds Regulations (Subsidiary Legislation 549.42). Among these protected sites are the woodlands in Buskett and Comino, which have also been designated by the European Commission as sites of Community importance. These protected areas form part of the coherent European ecological network of special areas of conservation established under Natura 2000. Generally, within these protected areas, no operations or activities may be carried out unless consent has been given by the competent authority; and before granting such consent, the Authority will, where it appears that such activity is likely to have a significant effect on the protected site, carry out, or require the applicant to carry out, an environmental assessment of the implications of the activity on the site.

Additionally, the Environment and Resources Authority (ERA) is empowered, under the EPA, to issue conservation orders to protect areas which are deemed important from a landscape perspective. Once an area is 'protected' for conservation, the ERA may take such measures as it deems necessary to protect the status of the area and prevent any deterioration thereof.

Protection of flora and fauna species

8 What are the main features of the rules protecting flora and fauna species?

The overall protection of species is governed by the Flora, Fauna and Natural Habitats Protection Regulations (Subsidiary Legislation 549.44). The Regulations prohibit persons from, among other things, disturbing,

capturing, killing, destroying, transporting and selling protected species without first obtaining a permit. They also contemplate measures to maintain or restore, at favourable conservation status, natural habitats and species of wild fauna and flora of Community interest, taking account of the economic, social and cultural requirements and regional and local characteristics. Moreover, the Regulations impose obligations on the competent authority in terms of developing national strategies and other action plans and programmes aimed at the conservation and sustainable use of biodiversity.

The Schedules to the Regulations identify the habitats and species which are given protection status, specifying the level of protection. Natural habitats whose conservation requires protection are designated as Special Areas of Conservation, and this includes areas of both national and international importance. Similarly, species of animals and plants of both Community and national interest are also designated as Special Areas of Conservation. The Regulations also identify animal and plant species of Community and national interest that are in need of strict protection.

Other legislation governing the protection of flora and fauna include the Conservation of Wild Birds Regulations (Subsidiary Legislation 549.42), the Trade in Species of Fauna and Flora Regulations (Subsidiary Legislation 549.38) and the Trees and Woodlands Protection Regulations (Subsidiary Legislation 549.64). In addition, there are various other pieces of legislation under Maltese law regulating the protection of a specific species or a defined protected area.

Noise, odours and vibrations

9 | What are the main features of the rules governing noise, odours and vibrations?

Environmental noise is mainly regulated under the Assessment and Management of Environmental Noise Regulations (Subsidiary Legislation 549.37) which define environmental noise as unwanted or harmful outdoor sound created by human activities, including noise emitted by means of transport, road traffic, rail traffic and air traffic, and from sites of industrial activity. The Regulations aim to define a common approach intended to avoid, prevent or reduce on a prioritised basis the harmful effects, including annoyance, due to exposure to environmental noise. To this end, the Regulations seek to:

- determine the exposure to environmental noise through noise mapping;
- ensure that information on environmental noise and its effects are made available to the public; and
- adopt action plans based upon noise-mapping results, with a view to preventing and reducing environmental noise where necessary and particularly where exposure levels can induce harmful effects on human health and preserving environmental noise quality where it is good.

Implementation of the regulations is the responsibility of the ERA.

Vibrations are, in effect, regulated under the Industrial Emissions (Framework) Regulations (Subsidiary Legislation 549.76) and are included in the definitions of 'pollution' and 'emissions'; and odours are controlled by the competent authorities through general permitting requirements including trading licences and environmental permits.

Liability for damage to the environment

10 | Is there a general regime on liability for environmental damage?

In terms of the EPA, it is the duty of everyone, including the government, to protect the environment and to assist in preventative and remedial measures to ensure its protection. On the government's part, this is primarily done through the issuance of regulations that impose financial penalties, and in certain circumstances imprisonment, on persons acting in contravention of this obligation. However, for a person to be held responsible for acts harmful to the environment, such person must be in breach of a specific law. Additionally, where a breach occurs, only material (real) damages may be recovered, which may include loss of profits. Moral, psychological and penal damages are not generally permitted.

The EPA gives the minister responsible for the environment the necessary power to protect the environment as an entity in itself. It furthermore acknowledges the difficulty in quantifying damages in cases of environmental harm and directs the courts to decide the quantum according to their best judgment, thereby incorporating the polluter pays principle.

Additionally, the Prevention and Remedying of Environmental Damage Regulations (SL549.97) which transpose the EU Directive on Environmental Liability, establish a framework of environmental liability based on the polluter pays principle, to prevent and remedy environmental damage. The Regulations apply to environmental damage caused by defined occupational activities (listed in Schedule III to the Regulations) and to imminent threats of such damage occurring by reason of any of those activities. The regulations cover damage to land, water and biodiversity.

Liability under the Regulations is limited to remediation of the actual environmental damage caused by the occupational activity. The Regulations adopt a strict liability approach for damage resulting from 'dangerous activities', being those activities listed in Schedule III.

Environmental taxes

11 | Is there any type of environmental tax?

Malta has introduced a number of fiscal instruments, mainly environmental taxes, to discourage the use of environmentally damaging activities such as the burning of fossil fuels, while promoting other alternative and more efficient energy sources. Overall, these taxes can be grouped into three categories: energy, transportation, and pollution and resources. In terms of energy, the taxes comprise:

- carbon taxes and taxes on energy products for transportation such as diesel and petrol;
- taxes on energy products for stationary use (coal, oil products, electricity, natural gas); and
- taxes on greenhouse gases

With respect to transport, taxes comprise road usage tax and taxes on the import, sale and registration of motor vehicles. Policies allowing favourable tax rates for lower emission levels have been implemented. The rate of registration tax levied varies depending on the carbon dioxide emission value and age of the vehicle, among other contributing factors. The Annual Circulation Tax also takes into account the age of the vehicle and specifications such as vehicle weight or engine capacity, depending on the type of vehicle in consideration.

Lastly, pollution and resource taxes comprise taxes on air and water pollution, taxes on waste management and on raw material extraction.

Environmental reporting

12 | Are there any notable environmental reporting requirements (eg, regarding emissions, energy consumption or related environmental, social and governance (ESG) reporting obligations)?

Sectors of industry covered by the Emissions Trading System (ETS) are subject to reporting obligations. Under the ETS regime, installation and aircraft operators must submit a monitoring plan describing

the measures by which annual emissions from the installation will be monitored and reported. The monitoring plan must be approved by the national competent authority and will serve as the accepted methodology for monitoring in that installation. On an annual basis, the operator of the installation must submit verified emissions reports to the competent authority. The reports must first be verified by a competent, independent accredited verifier before being submitted to the competent authority. A verification report issued by the verifier must accompany the emissions report when this is submitted to the authority.

ESG reporting is not yet a regulatory requirement under Maltese law. However, this will change with the adoption of the Corporate Sustainability Reporting Directive (CSRD) by the EU, which will apply to all member states, including Malta. The CSRD will come into effect in the 2023 financial year for large companies, while SMEs will have until the 2026 financial year to comply.

The EU Commission will set in place compulsory reporting requirements for large companies, of which there are approximately 50,000 in Europe. A large company is defined as fulfilling two of these three criteria: €40 million in net turnover, €20 million in assets or 250 or more employees. Separate, proportionate standards will be introduced for listed SMEs, which will have to report in a like manner.

It must be noted, however, that at present, there is a non-financial reporting obligation on large public-interest companies with more than 500 employees. This obligation stems from the Non-Financial Reporting Directive (Directive 2014/95/EU), which was transposed into Maltese law through an amendment to the Maltese Companies Act (Chapter 386 of the laws of Malta).

Government policy

13 | How would you describe the general government policy for environmental issues? How are environmental policy objectives influencing the legislative agenda?

National environmental policy covers all environmental sectors and natural resources, including air, waste, water, land, soil, climate, biodiversity, coastal and marine areas, noise, chemicals and mineral resources. It covers, but is not restricted to, obligations stemming from the European Union environment acquis. The Environment and Resources Authority has formulated and implemented several policies and action plans to serve as a framework to guide environmental protection initiatives and to support the various legislation.

HAZARDOUS ACTIVITIES AND SUBSTANCES

Regulation of hazardous activities

14 | Are there specific rules governing hazardous activities?

The main source of legislation concerning hazardous activities is the Control of Major Accident Hazards Regulations (Subsidiary Legislation 424.19) which implements Directive 2012/18/EU. The Regulations concern the use of dangerous substances rather than specific activities, and primarily aim at regulating those sites that store, produce or make use of dangerous substances in sufficient quantities and which could constitute a serious health, safety or environmental risk. The Regulations distinguish lower-tier establishments from upper-tier establishments; this categorisation depends on the quantity of the dangerous substance present in the establishment.

There are no licensing requirements for operators carrying out activities covered by these Regulations; however, operators are required to notify the competent authority of the activities carried out in the establishment, specifying the dangerous substances present and the quantities of each substance. Operators are also required to describe the immediate environment of the establishment and factors likely to cause a major accident or to aggravate the consequences thereof including, where available, details of neighbouring establishments.

Regulation of hazardous products and substances

15 | What are the main features of the rules governing hazardous products and substances?

With regard to hazardous products and substances, regulations are aimed at protecting the environment and creating common standards to protect consumers, ensuring the free circulation of goods among member states without damage being caused to the environment or human health. In fact, the Dangerous Substance Regulations (SL427.14) were issued under the Product Safety Act (Chapter 427). The Regulations define substances as chemical elements and their compounds in the natural state or obtained by any production process. Furthermore, the Regulations list a number of substances which are considered to be 'dangerous', such as explosive and extremely and highly flammable substances and preparations. The main obligations on the importer and producer under these Regulations relate to labelling and packaging.

Maltese legislation concerning hazardous products and packages is mainly made up of EU Regulations, namely Regulation (EC) No. 1272/2008 on the classification, labelling and packaging of substances and mixtures (as amended by Commission Regulation (EU) 2018/1480 for the purpose of its adaptation to technical and scientific progress); and Regulation (EC) No. 1907/2006 on the registration, evaluation, authorisation and restriction of chemicals (REACH). The latter is designed to ensure a high level of protection of human health and the environment from risks that can be posed by chemicals. REACH makes the industry responsible for assessing and managing the risks posed by chemicals and providing appropriate safety information to their users.

Other potentially dangerous and hazardous substances, such as pesticides, explosives and fertilisers, are regulated under Maltese law by substance-specific legislation.

Industrial accidents

16 | What are the regulatory requirements regarding the prevention of industrial accidents?

The Regulations place various obligations on the operators of establishments covered by the Control of Major Accident Hazards Regulations (Subsidiary Legislation 424.19), such as notifying the competent authority of the presence of dangerous substances and having a major-accident prevention policy in place. Upper-tier establishments have additional obligations, such as preparing a safety report, establishing a safety management system and an emergency plan, and informing persons in the vicinity. The competent authorities also have various obligations directly related to the establishments, such as inspections of the installation and review of the safety report or major accident prevention policy, and obligations relating to emergency planning and land use planning.

ENVIRONMENTAL ASPECTS IN TRANSACTIONS AND PUBLIC PROCUREMENT

Environmental aspects in M&A transactions

17 | What are the main environmental aspects to consider in M&A transactions?

The main environmental aspect in M&A transactions would be environmental liability. Where a company acquires shares in another company that would have committed an environmental wrongdoing prior to the acquisition, the acquiring company (as shareholder) would not, except in very limited circumstances, be liable unless it had also participated

in such wrongdoing. The purchaser of the shares does not itself take on the environmental liability of the company.

Consideration should also be had to permitting issues. In a case where a company operates under an environmental permit that risks being revoked by the competent authority due to non-compliance with environmental regulations, shareholders may not want to acquire shares in such company. For this reason, investigations and due diligence exercises should always be carried out to ensure that any environmental-related issues are disclosed prior to the acquisition.

Environmental aspects in other transactions

18 | What are the main environmental aspects to consider in other transactions?

In real estate transactions, issues of possible soil pollution and other environmental considerations would certainly be of interest to a new owner because, although such owner would not be held liable for environmental damage caused prior to the acquisition, the competent authorities could nevertheless, in certain cases, impound the property. In transactions regarding financing, environmental due diligence will in general be similar to that of an M&A transaction.

Environmental aspects in public procurement

19 | Is environmental protection taken into consideration by public procurement regulations?

The Public Procurement Regulations (Subsidiary Legislation 601.03) do not formulate any absolute environmental criteria. They do, however, provide that the conditions governing the performance of a contract may concern environmental considerations. The Regulations further provide that contracting authorities are to establish technical specifications for public contracts, such specifications may include environmental characteristics. When laying down such environmental characteristics in terms of performance or functional requirements, contracting authorities may use the detailed specifications or parts thereof as defined by European, national or multi-national eco-labels or any other eco-label. The contracting authority may be required by the Director of Contracts to provide information to the tenderer or candidate as to its obligations, including those relating to environmental protection that shall be applicable to the works or services executed during the performance of the contract.

ENVIRONMENTAL ASSESSMENT

Activities subject to environmental assessment

20 | Which types of activities are subject to environmental assessment?

The main types of environmental assessment insofar as developments and projects are concerned are the environmental impact assessment (EIA) and the appropriate assessment (AA). These assessments are not licences in themselves, but they do form part of the development permitting process.

The Environmental Impact Assessment Regulations (Subsidiary Legislation 549.46) cover large-scale projects (or activities) likely to have significant impact on the environment. These activities are listed in Schedule I of the Regulations and include construction of roads and motorways, airports, power plants and wastewater treatment plants, among others. Projects of a smaller scale may be subject to an AA if the site of the development falls within, or is relatively close to, a Natura 2000 or other protected site or area, and is likely to have an adverse effect on the protected site.

Additionally, governmental plans and programmes that are likely to have a significant effect on the environment are subject to a Strategic Environmental Assessment (SEA) in accordance with the Strategic Environmental Assessment Regulations (Subsidiary Legislation 549.61).

Environmental assessment process

21 | What are the main steps of the environmental assessment process?

Before consent is granted for a development, a screening process must take place to determine whether the development qualifies for mandatory assessments, such as the AA and the EIA. If an AA is required, the case is processed in accordance with the Flora, Fauna and Natural Habitats Protection Regulations (SL549.44), and if an EIA is required, in accordance with the EIA Regulations (SL549.46). It is important to note that these two assessments are not exclusive of each other and in some cases both may be required.

An AA is required where the proposed development is not directly connected with or necessary to the management of the protected site, and where it appears to the ERA that such activity is likely to have a significant effect on the protected site. The information gathered for this assessment will enable the Authority to make an informed decision as to whether or not to grant development consent. Developments which are relatively complex will usually require detailed assessments. However, it is possible that even with detailed assessments the impacts remain unclear and therefore cannot be excluded. In this case, a full-blown study, similar to an EIA, would be required. With regard to the actual content of the AA, this would depend very much on the complexity and nature of the activities to be carried out and the location or site of the activities. At the very least, the assessment would have to include a description of the project and the land and marine environments affected by the activities, the elements of the project which are likely to have environmental impacts, the potential impacts on the habitats and or species listed in the Schedules to SL549.44 and mitigation measures. Once the relevant information has been gathered and the report is submitted to the ERA, the adverse effects on the integrity of the site have to be assessed by the Authority. If the impact is considered insignificant or likely to be significant or unclear but can be rendered insignificant through mitigation measures, the proposed activity can proceed. If, on the other hand, the mitigation measures are insufficient such that significant impacts would remain, then the proposal may be refused.

With regard to EIAs, all developments listed in Schedule I of the EIA Regulations require either a full EIA or screening in accordance with Schedule III by the ERA, depending on whether they fall within Category I or II. Developments not listed in the Schedule would not require an EIA or screening unless in the opinion of the ERA they are likely to have significant impacts on the environment.

Where the ERA indicates that a project or development falls within Schedule I, the permit application must be accompanied by a Project Description Statement (PDS) in accordance with Schedule II. This provides the ERA with the necessary information to conduct a screening of the proposed development (not falling in Category I – as the latter automatically require a full EIA) and to decide whether an EIA is required. The decision is communicated to the applicant within 30 calendar days and is made available to the public. Following screening, if a proposed development requires an EIA, project-specific Terms of Reference (TOR) are formulated by the ERA following a 30-day consultation period with government agencies, NGOs, affected local councils and the public. These TORs will determine the content of the EIA Report. An EIA coordinator and independent consultants are then appointed by the developer to conduct the studies required and to assess the likely impacts of the environmental parameters established in the TORs. The EIA findings are compiled into an EIA report. Once the report is complete,

the developer must publish a notice in local newspapers, informing the public that an EIA report has been submitted to the ERA and is available for public consultation. A digital copy of the report is made available on the ERA's website for a 30-day consultation period. Concurrently, consultation is undertaken with government entities, local councils and NGOs. For Category I projects (those automatically requiring a full EIA), a public hearing is organised at the cost of the developer within or after the consultation period. All comments, queries and requests made during the consultation period and public hearing are referred to the EIA coordinator for a reply, and the EIA report may be revised accordingly. The ERA will examine the final EIA report and prepare its final assessment thereon, which will have a bearing on the decision on whether to approve the development permit or not. Should it be approved, then specific conditions and post-permit monitoring will apply.

REGULATORY AUTHORITIES

Regulatory authorities

22 | Which authorities are responsible for the environment and what is the scope of each regulator's authority?

The Environment and Resources Authority (ERA) is the main body responsible for ensuring compliance with environmental legislation. The ERA's primary functions are to:

- formulate and implement policies relating to the protection and management of the environment, and the sustainable management of natural resources;
- permit, assess, investigate, audit, monitor and take action on any activity, intervention, project, operation or land use that may have an effect on the environment; and
- carry out, review or request others to carry out environmental assessments, environmental audits and environmental monitoring of activities and works having an impact on the environment.

The ERA has the power to revoke or modify any authorisation or permit granted where environmental damage or risk is concerned. Additionally, the ERA has the power to carry out investigations and inspections. The ERA may issue stop notices and compliance orders and may impose administrative fines.

Investigation

23 | What are the typical steps in an investigation?

Regulatory authorities may monitor and investigate any issues and complaints brought to their attention. In certain cases, the relevant regulator or competent authority will have the power to take any action that it may deem necessary and enforce it in accordance with relevant laws. When an investigation is being carried out, apart from assessing the complaint and the facts of the case, the authorities may also carry out on-site inspections, collect documentation and evidence, carry out inquiries and invite any interested parties to make any submissions. Interim measures may also be evoked to safeguard rights.

Administrative decisions

24 | What is the procedure for making administrative decisions?

Generally, when an administrative decision is to be made, consultation, oral or written, will occur, after which parties are invited to make submissions. The procedures for making such decisions are usually subject to any relevant policies and guidelines that may be issued by authorities.

Sanctions and remedies

25 | What are the sanctions and remedies that may be imposed by the regulator for violations?

Violations may amount to offences, rendering the offender criminally liable. In such cases, offenders may face imprisonment, revocation of a licence or permit, or a fine. Administrative penalties may also be imposed, as well as warnings or substantial fines, as the situation may be.

Appeal of regulators' decisions

26 | To what extent may decisions of the regulators be appealed, and to whom?

Decisions of public authorities are generally subject to appeal. Decisions as to environment assessments, access to environmental information and the prevention and remedying of environmental damage taken by the ERA, for instance, may be appealed before the Environment and Planning Review Tribunal. From such decisions, further, albeit limited, recourse may be had to the Court of Appeal (Inferior Jurisdiction). It is also possible to have an administrative action reviewed judicially when claimed to be ultra vires.

Recourse may also be had to the ombudsman, which, however, may only result in a recommendation in one's favour.

JUDICIAL PROCEEDINGS

Judicial proceedings

27 | Are environmental law proceedings in court civil, criminal or both?

Court proceedings concerning environmental law matters may be civil or criminal, depending on the nature and type of claim.

Powers of courts

28 | What are the powers of courts in relation to infringements of environmental law?

At the request of an appellant, which must be made simultaneously with the appeal application, the Environment and Planning Review Tribunal (Tribunal) may suspend any development from being carried out pending its decision. Such suspension will be made under terms, conditions and any other measures the Tribunal may deem fit.

The court, in criminal proceedings, is empowered to order imprisonment or may impose fines and penalties. In civil proceedings, it may award damages or order that any wrongful action be remedied.

Civil claims

29 | Are civil claims allowed regarding infringements of environmental law?

Non-contractual claims would generally be brought under the basic principles of tort found in the Civil Code, while contractual claims could be brought on the basis of breach of contract.

Defences and indemnities

30 | What defences or indemnities are available?

The general principle at law is that the person liable for any wrongdoing must answer to any damage caused up to that degree. Therefore, all defences provided generally by law shall apply. The statute of limitations in the Civil Code can be used as a defence to an action for damages suffered due to a wrongful act carried out in relation to the environment.

Such a claim would be time-barred after a period of two years, which starts to run from the time the wrongful act is committed. In certain cases, set out in the Civil Code, several and joint liability applies, for instance, where two or more persons, acting maliciously, have caused environmental damage.

Directors' or officers' defences

31 | Are there specific defences in the case of directors' or officers' liability?

In cases of civil liability for damage committed by a company or corporate entity, the director or any other officer of the company cannot be held responsible for such damage.

In terms of criminal liability, directors and similar officers may be held personally liable for the offence. However, in such cases, a defence is that the offence was carried out without the director's or officer's knowledge, and that all due diligence had been exercised to prevent the commission of the offence.

Appeal process

32 | What is the appeal process from trials?

Civil actions and criminal offences can be appealed before the relevant court of appeal. The decision of the latter would be final. Where there is a claim for a breach of a constitutional right, the court may refer the matter to the civil court, having constitutional jurisdiction, to be decided. An appeal from this decision may be brought before the constitutional court.

INTERNATIONAL TREATIES AND INSTITUTIONS

International treaties

33 | Is your country a contracting state to any international environmental treaties, or similar agreements?

Malta is a signatory to various international environmental treaties, primarily UN conventions, both directly and via the EU. Among the most notable are:

- the International Convention on Civil Liability for Oil Pollution Damage;
- the UN Convention on the Law of the Sea;
- the Convention on the Prevention of Marine Pollution by Dumping of Wastes at Sea and other Matter;
- the Geneva Convention on Long-Range Transboundary Air Pollution;
- the Basel Convention for the Transboundary Movement of Hazardous Wastes and their Disposal;
- the Vienna Convention on the Protection of the Ozone Layer; and
- the Aarhus Convention on Access to Information and Access to Justice in Environmental Matters.

International treaties and regulatory policy

34 | To what extent is regulatory policy affected by these treaties?

These conventions influence both Maltese law and policy, so much so that, when ratified, such international treaties or conventions become part of Maltese law.

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UPDATE AND TRENDS

Key developments of the past year

35 | Are there any emerging trends or hot topics in environment law in your jurisdiction?

Environmental law continues to change and evolve as new regulations and policies are adopted and subsequently implemented. Due to its small size, high population density and limited natural resources, Malta's environment faces several challenges in relation to the improvement of air quality, protection of biodiversity, improvement of waste management practices and safeguarding of water resources. All of these topics, however, continue to dominate Malta's environmental efforts.

Netherlands

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LEGISLATION

Main environmental regulations

1 | What are the main statutes and regulations relating to the environment?

The main statutes and regulations relating to the environment are:

- the Environmental Management Act;
- the Environmental Permitting General Provisions Act;
- the Living Environment Law Decree;
- the Activities (Environmental Management) Decree;
- the Spatial Planning Act;
- the Nature Conservation Act;
- the Major Accidents (Risks) Decree;
- the Soil Protection Act;
- the Water Act;
- the Noise Abatement Act; and
- the Nature Conservation Act.

Integrated pollution prevention and control

2 | Is there a system of integrated control of pollution?

Under the Industrial Emissions Directive 2010/75/EU (implemented in the Environmental Management Act and the Activities Decree), companies containing integrated pollution prevention and control (IPPC) installations must have an environmental permit that complies with the Best Available Techniques (BAT) (as included in BAT conclusions and European and national BAT reference documents).

Soil pollution

3 | What are the main characteristics of the rules applicable to soil pollution?

Under the Soil Protection Act, soil pollution that was caused before 1987 only has to be remediated if the competent authorities have stated that the pollution is serious and urgent remediation is necessary. Functional remediation is the standard.

Soil pollution caused after 1987 falls under a duty of care, meaning that, in principle, all pollution must be remediated by the person that caused it.

The responsibility for remediation lies primarily with the person that caused the pollution or with the owner, although the owner of a plot of land that is part of a business park is responsible for remediation as well.

Regulation of waste

4 | What types of waste are regulated and how?

Waste is regulated both at the European level and at the national level. The objective is to limit waste and to stimulate reuse as much as possible. Detailed regulations are in place concerning the definition of by-products and end of waste. Companies that accept or process waste generally require an environmental permit to do so.

The Environmental Management Act contains a broad range of administrative requirements for companies that create, import and remove (hazardous) waste. The European Waste Shipment Regulation (Regulation (EC) No 1013/2006) is directly applicable to shipments of waste within the European Union and is also relevant for shipments to and from the European Union.

Regulation of air emissions

5 | What are the main features of the rules governing air emissions?

Companies must comply with the BAT as much as possible when limiting air emissions. The Activities Decree contains directly applicable emission limit values for all companies. The Environmental Management Act contains emission limit values for some specific contaminants.

Under the Industrial Emissions Directive 2010/75/EU, which contains regulations for large polluting companies, companies containing IPPC installations must have an environmental permit that complies with the BAT. BAT conclusions regularly contain emission limit values that must be incorporated in the environmental permit.

The Activities Decree (based on the Energy Efficiency Directive) contains regulations regarding energy efficiency and requires companies to take all measures that can be paid back within five years. The duty to perform energy audits only applies to large companies, which must perform an audit every four years. In the energy audit report, a list concerning energy saving measures must be incorporated.

Protection of fresh water and seawater

6 | How are fresh water and seawater, and their associated land, protected?

Under the European Water Framework Directive (Directive 2000/60/EC), all European waters had to meet certain quality standards by 2015. Water quality is also one of the main purposes of the Water Act. Standards for chemical and ecological quality are included in the Environmental Management Act and the Water Quality Requirements and Monitoring Decree 2009.

Protection of natural spaces and landscapes

7 | What are the main features of the rules protecting natural spaces and landscapes?

Under the European Habitat Directive 92/43/EEG, Natura 2000 areas have been appointed. These are protected by the Nature Conservation Act. A system of permits and exemptions is in place to guarantee

that Natura 2000 areas are protected. An important area of focus is protecting Natura 2000 areas from nitrogen deposition.

Protection of flora and fauna species

8 | What are the main features of the rules protecting flora and fauna species?

The European Birds Directive 2009/147/EC and the Habitat Directive 92/43/EEG have been implemented in the Nature Conservation Act. Under the Act, both specific types of birds and other animals and plants are protected via a system of permits and exemptions. The level of protection and types of protected species varies per province.

Noise, odours and vibrations

9 | What are the main features of the rules governing noise, odours and vibrations?

Regulations regarding noise are laid down in the Environmental Management Act (eg, noise production ceilings and noise exposure from national roads), the Noise Abatement Act (assessment framework for the realisation of roads and railways and industrial noise zoning) and the Activities Decree (general noise regulations and limits for companies).

Regulations regarding protection against odour are incorporated in the Activities Decree. Odour regulations can also be included in an environmental permit. Specific regulations have been set for odour caused by livestock farms in the Odour Nuisance and Livestock Farming Act.

The Activities Decree also contains regulations concerning vibrations.

Liability for damage to the environment

10 | Is there a general regime on liability for environmental damage?

Title 17.2 of the Environmental Management Act (which implements Directive 2004/35/CE on environmental liability) contains regulations concerning liability for damage to the environment that occurred after 30 April 2007. The regulations concern larger cases of environmental damage to soil, water and nature (the latter meaning damage to protected species and natural habitats). The person or company causing the damage must prevent imminent damage and limit and restore damage that has occurred. This regulation exists alongside other regulations containing environmental liabilities, such as the Soil Protection Act.

Environmental taxes

11 | Is there any type of environmental tax?

The Dutch Environmental Taxes Act provides for taxes on mains water, waste, coal and energy.

Mains water tax is levied on suppliers, who may charge the tax on their customers.

Waste tax is levied from waste processors who may pass the tax on to customers who use their landfill sites.

Coal tax is levied on companies that use coal as fuel and coal importers. It is also levied on the possession of coal by companies, public bodies and natural persons for purposes other than personal use. Exemptions are applicable under certain circumstances, for example, if the company does not use the coal solely for heating or as fuel.

Energy tax is levied on the use of electricity and natural gas. Energy suppliers pay the tax and may pass it on to their customers. In some cases, the supplier can receive an energy tax refund or an exemption, for example, if natural gas is used for the generation of electricity. A tax reduction is granted per electricity connection.

In addition to the aforementioned taxes, the Netherlands has water pollution levies, purification levies and sewage levies.

Certain companies can benefit from a tax scheme for investing in environmentally friendly technology. They may be eligible for the environmental investment deduction (MIA) and arbitrary depreciation of environmental investments (Vamil) schemes. Through the MIA, companies can deduct up to 36 per cent of the investment costs for an environmentally friendly investment on top of its regular investment tax deductions, and through Vamil, the company can decide when to write off 75 per cent of the investment costs.

There are no general issues regarding double taxation.

Environmental reporting

12 | Are there any notable environmental reporting requirements (eg, regarding emissions, energy consumption or related environmental, social and governance (ESG) reporting obligations)?

In the environmental annual report, industrial companies report their waste, energy and water consumption and emissions to air, water and soil. This information appears on the European Pollutant Release Transfer Register (PRTR).

Government policy

13 | How would you describe the general government policy for environmental issues? How are environmental policy objectives influencing the legislative agenda?

In recent years environmental issues have received more attention than previously, especially with regard to nitrogen deposition and substances of very high concern.

HAZARDOUS ACTIVITIES AND SUBSTANCES

Regulation of hazardous activities

14 | Are there specific rules governing hazardous activities?

Safety regulations are in place to limit risks owing to the storage, production and transport of dangerous substances, and risks caused by wind turbines and airports. In spatial planning, vulnerable objects (eg, houses and schools) must be protected against external safety risks (primary in the applicable zoning plans). The applicable regulations are included in, for example, the External Safety (Establishments) Decree, the Activities Decree and the Physical Planning (General Rules) Decree.

Regulation of hazardous products and substances

15 | What are the main features of the rules governing hazardous products and substances?

The European REACH Regulation 1907/2006 is directly applicable and contains regulations concerning registration, evaluation and authorisation of chemical substances that companies must comply with.

The Activities Decree contains a regulatory framework regarding emissions of 'substances of very high concern' (substances that are dangerous for people and the environment). The main purpose of these regulations is to minimise emissions of these substances through a source-oriented approach and reduction measures.

Industrial accidents

16 What are the regulatory requirements regarding the prevention of industrial accidents?

The Major Accidents (Risks) Decree (BRZO) (which is an implementation of the Seveso III Directive) contains regulations concerning external safety, the prevention of industrial accidents and labour safety. Companies that exceed the BRZO threshold values (which concern the permitted amount of hazardous substances within the facility) are responsible for safety in relation to dealings with hazardous substances within their facility. Low threshold companies must take all measures necessary to prevent accidents and draw up a prevention policy and safety management system. High threshold companies must also submit a safety report. BRZO companies that are situated close to each other can be designated as 'domino' companies.

ENVIRONMENTAL ASPECTS IN TRANSACTIONS AND PUBLIC PROCUREMENT

Environmental aspects in M&A transactions

17 What are the main environmental aspects to consider in M&A transactions?

Aspects to consider include:

- compliance with environmental permits and general regulations (eg, the Activities Decree);
- the European REACH Regulation (REACH);
- legionella;
- nitrogen;
- developments in the applicable environmental legislation that may be relevant to the business;
- zoning;
- soil contamination;
- possible complaints (regarding noise, odour, etc);
- expansion possibilities (on the basis of an applicable zoning plan, environmental permits, etc); and
- developments on neighbouring plots.

Environmental aspects in other transactions

18 What are the main environmental aspects to consider in other transactions?

Aspects to consider include:

- compliance with environmental permits and general regulations (eg, the Activities Decree);
- REACH;
- legionella;
- nitrogen;
- developments in the applicable environmental legislation that may be relevant to the business;
- zoning;
- soil contamination;
- possible complaints (regarding noise, odour, etc);
- expansion possibilities (on the basis of an applicable zoning plan, environmental permits, etc); and
- developments on neighbouring plots.

Environmental aspects in public procurement

19 Is environmental protection taken into consideration by public procurement regulations?

Environmental protection is taken into consideration in multiple ways in the Public Procurement Act. Article 2.81, paragraph 2 obliges public authorities to request the tenderer or candidate to indicate that it has taken into account the environmental, social and labour law obligations following from EU law, national law or collective labour contract law or the provisions summed up in Annex X of Directive 2014/24/EU on international environmental, social and labour law. When a contracting authority notices that any of these obligations are not met, it rejects the tender because the tender is abnormally low (article 2.116, paragraph 5 of the Act).

Under articles 2.84 and 2.85 of the Public Procurement Act, a tenderer or candidate provides the public authority with a self-declaration, in which it declares that it will comply with the technical specifications and performance conditions relating to (among other things) the environment. An entrepreneur can demonstrate his or her technical or professional competence (the suitability requirements) by indicating the environmental management measures he or she can apply while executing the public contract (article 2.93, paragraph 1, item (h) of the Public Procurement Act).

According to article 2.115, paragraph 2, item (e), environmental characteristics may also be one criterion the public authority uses to establish the most economically advantageous tender on the basis of the best price–quality ratio (the award criteria).

ENVIRONMENTAL ASSESSMENT

Activities subject to environmental assessment

20 Which types of activities are subject to environmental assessment?

An environmental impact assessment (EIA) is obligatory for plans and decisions by the competent authorities that can lead to negative impacts on the environment. Three routes can lead to the obligation to perform an EIA:

- the plan or decision is listed in the Environmental Impact Reporting Decree;
- the plan contains an activity that requires assessment under the Nature Conservation Act; and
- the provincial authorities have appointed specific activities.

An EIA is not a licence for an activity but must be performed as part of the preparation procedure for the decision that makes the activity possible (eg, a zoning plan or permit).

The Environmental Impact Reporting Decree makes a distinction between activities that require an EIA and activities that might require one but need to be assessed first. For the latter, an EIA is only necessary if negative effects on the environment cannot be ruled out.

Environmental assessment process

21 What are the main steps of the environmental assessment process?

Two procedures are possible: an extended and a limited procedure. In both procedures, the main steps are:

- announcement of the proposed activity to the authorities;
- notice regarding scope and detail;
- an EIA;
- public announcement and the possibility to submit views regarding the EIA;
- a decision regarding the activity;
- the possibility for appeal against the decision; and
- an evaluation.

In the extended procedure, it is compulsory to request advice from the EIA Commission. In the limited procedure, this is voluntary.

REGULATORY AUTHORITIES

Regulatory authorities

22 | Which authorities are responsible for the environment and what is the scope of each regulator's authority?

Various regulatory authorities are responsible for the environment. The Human Environment and Transport Inspectorate is responsible for the supervision and enforcement of rules and regulations relating to, among other things, shipment of waste. The Inspectorate SZW is responsible for the supervision and enforcement of rules and regulations relating to working conditions.

The competent provincial authorities are responsible for large industrial companies. The competent municipal authorities are responsible for small industrial companies and spatial decisions. The competent provincial or municipal authorities may grant environmental permits. The mayors of the municipalities are authorised to give certain emergency orders in the event of environmental catastrophes or disasters. The Minister of Economic Affairs and Climate is responsible for some (large) energy projects.

The public prosecutor or criminal court may impose criminal sanctions.

Investigation

23 | What are the typical steps in an investigation?

The regulatory authorities periodically inspect the compliance of companies with the applicable rules and regulations. Both announced and unannounced inspections are common.

To conduct the necessary inspections, the regulatory authorities have various powers, including the authority to demand access to the premises and inspection of documents and records. A report is made of their findings. The report may be made publicly available pursuant to the Public Information Act but, in principle, only after the party concerned has been given the opportunity to submit its complaints.

Administrative decisions

24 | What is the procedure for making administrative decisions?

After a violation of a rule or regulation has been established, the competent authorities announce an intention to impose an administrative enforcement decision to the party involved before enforcement decisions are actually imposed. A complaint may be submitted by the party involved against the intention to impose an administrative enforcement decision.

Sanctions and remedies

25 | What are the sanctions and remedies that may be imposed by the regulator for violations?

For violations of environmental rules and regulations, the competent authorities may, under certain conditions, impose punitive administrative sanctions, such as a fine, or remedial administrative sanctions, such as an order subject to a penalty for non-compliance and an administrative enforcement order. Revocation of an environmental permit is the most severe administrative sanction that may be imposed. An exploitation ban may be imposed as well.

Criminal penalties (eg, fines or the restoration of illegal profits) may, under certain conditions, be imposed as well if rules and regulations have been violated.

Administrative (punitive and remedial) sanctions are imposed by the competent authorities and can, in the case of an appeal, be assessed by the administrative courts. Criminal penalties are generally imposed by the criminal courts following prosecutions.

The Public Information Act provides a basis for publication of enforcement decisions.

Appeal of regulators' decisions

26 | To what extent may decisions of the regulators be appealed, and to whom?

Administrative enforcement decisions may be appealed on formal and material grounds to the competent administrative court, and the decisions thereof may be appealed to the Judicial Department of the Council of State. Criminal enforcement decisions may be appealed in multiple instances as well (courts, high courts and the Supreme Court).

JUDICIAL PROCEEDINGS

Judicial proceedings

27 | Are environmental law proceedings in court civil, criminal or both?

Environmental law proceedings in court may be civil (eg, wrongful acts owing to contamination), criminal (eg, as a result of criminal enforcement of environmental rules and regulations) or administrative (eg, with regard to environmental permitting procedures and administrative enforcement).

Powers of courts

28 | What are the powers of courts in relation to infringements of environmental law?

The civil courts, regardless of whether in provisional proceedings, may order both the taking of certain actions (eg, to remediate certain pollution) and the ceasing of certain actions (eg, activities that cause contamination).

The administrative courts may nullify and, in provisional proceedings, suspend administrative decisions based on environmental law.

Both in civil law proceedings and in administrative law proceedings, provisional measures can and will only be allowed in the event of an urgent interest.

Civil claims

29 | Are civil claims allowed regarding infringements of environmental law?

Civil (contractual and non-contractual) claims regarding infringement of environmental law are allowed in principle (eg, in the event of breach of contract or wrongful act). However, a claim before a civil court is inadmissible if administrative proceedings with sufficient resources (eg, an appeal) are available.

The possibility for government bodies to claim infringements of environmental law may be limited if they can achieve the same goal using administrative measures.

Defences and indemnities

30 | What defences or indemnities are available?

In the event of contractual civil claims, the available defences or indemnities depend heavily on the specific contractual arrangements that have been made. Dutch contract law, in principle, allows the parties to arrange their agreements as they believe suitable.

In respect of non-contractual civil claims, the most common defences are lack of unlawfulness, lack of guilt, lack of accountability and lack of damages. Besides these claims, it can be argued that the alleged violation of a legally binding norm does not allow protection against the damage that has occurred.

Third parties may be prosecuted in proceedings as a co-defendant if they can be held responsible for environmental damages.

Directors' or officers' defences

31 | Are there specific defences in the case of directors' or officers' liability?

Criminal law offers the possibility of prosecuting directors and officers, provided that they are the actual supervisors (ie, all persons who have actually led the company or site). In principle, the same legal defences that apply to a company apply to directors and officers, although depending on the specific circumstances, directors and officers could argue that they had not been awarded sufficient funds by the company to comply with environmental rules and regulations.

Appeal process

32 | What is the appeal process from trials?

Appeal of the decisions of the court in civil or criminal matters lies with the high courts and, ultimately, the Supreme Court. Appeal of the decisions of the administrative courts lies with the Judicial Department of the Council of State.

INTERNATIONAL TREATIES AND INSTITUTIONS

International treaties

33 | Is your country a contracting state to any international environmental treaties, or similar agreements?

The Netherlands is a contracting state to various international environmental treaties, including the Aarhus Convention, the Basel Convention, the Convention for the Protection of the Marine Environment of the North-East Atlantic and the International Convention for the Prevention of Pollution from Ships. The Netherlands is also a member state of the European Union.

International treaties and regulatory policy

34 | To what extent is regulatory policy affected by these treaties?

Treaties that are ratified by the Netherlands are binding and must be complied with. In some cases, legislation and regulations must be implemented to comply with a treaty. In other cases, legislation and regulations must be amended to comply with a treaty.

UPDATE AND TRENDS

Key developments of the past year

35 | Are there any emerging trends or hot topics in environment law in your jurisdiction?

The planned entry into force of the Environment and Planning Act, which regulates and modernises legislation and regulations on, among other things, the environment, construction, spatial planning, nature and water, has been further postponed to 1 January 2023. The Environmental and Planning Act will have a large impact on the legal framework in the Netherlands.

To solve the 'nitrogen crisis' the legislator has amended the Nature Conservation Act several times since the Council of State ruled in 2019 that the Dutch law on nitrogen deposition was not in compliance with the Habitats Directive.

In addition, last year, the Minister of Environment and Housing signed the Clean Air Agreement together with various municipalities and provinces. The aim of the Agreement is to jointly and continuously improve air quality in the Netherlands. Participating parties take measures to limit air pollution from domestic sources. The ambition is to achieve a 50 per cent decrease in the negative health effects of domestic sources by 2030 compared with 2016.

The policy and rules and regulations relating to potential substances of very high concern, which concern substances that are currently not officially considered 'substances of high concern' but could possibly be qualified accordingly at a later date, are in development.

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LEGISLATION

Main environmental regulations

1 | What are the main statutes and regulations relating to the environment?

The National Environmental Policy Act (NEPA) is the umbrella procedural statute that requires federal agencies to consider the environmental impacts of their actions.

Several substantive statutes are media-specific:

- the Clean Air Act (CAA) regulates air quality and emissions;
- the Clean Water Act (CWA) regulates water quality and discharges;
- the Safe Drinking Water Act establishes drinking water standards for tap water and underground injection rules;
- the Resource Conservation and Recovery Act (RCRA) regulates hazardous and solid waste management;
- the Comprehensive Environmental Response, Compensation and Liability Act (also known as Superfund) addresses remediation of legacy disposal sites and release reporting; and
- the Oil Pollution Act provides for oil spill prevention and response.

Other statutes are resource-specific. The Endangered Species Act (ESA) protects listed endangered and threatened species and critical habitat. Other statutes protect certain species, including the Migratory Bird Treaty Act, the Bald and Golden Eagle Protection Act and the Marine Mammal Protection Act.

Other statutes govern natural resource planning and development on federal lands onshore and on the Outer Continental Shelf, including:

- the Mineral Leasing Act;
- the Outer Continental Shelf Lands Act;
- the Federal Land Policy and Management Act;
- the Mining Law of 1872;
- the National Forest Management Act;
- the National Park Service Organic Act;
- the Wild and Scenic Rivers Act;
- the National Wildlife Refuge System Administration Act;
- the Rivers and Harbors Act; and
- the Coastal Zone Management Act.

Additional statutes cover certain products or wastes:

- the Toxic Substances Control Act (TSCA) regulates new and existing chemicals and products that contain these chemicals;
- the Federal Insecticide, Fungicide and Rodenticide Act regulates pesticides; and
- the Federal Food, Drug and Cosmetic Act regulates food, drugs and cosmetics.

Still more statutes focus on human health and safety:

- the Hazardous Materials Transportation Act (HMTA) regulates transportation of hazardous materials;
- the Occupational Safety and Health Act regulates hazards in the workplace; and
- the Emergency Planning and Community Right-to-Know Act provides emergency planning and notification for hazardous and toxic chemicals.

Nearly all of these statutes have implementing regulations issued and administered by federal agencies vested with jurisdiction. The federal and state governments share authority to administer some federal environmental programmes (eg, the CAA and the CWA). States also have their own, sometimes more stringent, environmental laws, such as groundwater protection schemes, additional recycling and extended producer responsibility requirements, and state equivalents of NEPA. Counties, cities and other local government entities may have their own requirements as well.

Integrated pollution prevention and control

2 | Is there a system of integrated control of pollution?

There is no general system providing integrated pollution prevention and control. The US Environmental Protection Agency (EPA) administers most of the national environmental statutes and regulations, but other federal agencies also have jurisdiction over federal lands, wildlife, or specific activity types. State and local authorities generally may impose additional requirements where not pre-empted by federal law. In some cases, the federal system is a delegated programme where states implement minimum federal standards, but can impose more stringent requirements.

Soil pollution

3 | What are the main characteristics of the rules applicable to soil pollution?

Superfund's remediation authorities extend to pollution of soil and other media. EPA lists sites on the National Priority List based on a hazard ranking system. Liability under the act and state laws is typically strict, joint and several, and retroactive, even to legacy contamination sites. Potentially responsible parties (PRPs) liable for remediation under Superfund include entities that arrange or arranged for the disposal of hazardous substances, transporters and current and former owners and operators of contaminated sites. These PRPs may be strictly and retroactively liable for investigation, evaluation and remedial action, which is generally selected by EPA in compliance with the National Contingency Plan. Superfund also provides that federal and state 'trustees' can recover from PRPs the costs associated with the injury to, destruction of or loss of natural resources. States also implement voluntary clean-up

and brownfields programmes aimed at remediating and reusing legacy contaminated soil sites.

Regulation of waste

4 | What types of waste are regulated and how?

RCRA defines 'solid waste' as 'any garbage, refuse, sludge... and other discarded material'. Under that law, 'solid' wastes include solid, liquid, semisolid or contained gaseous material. Solid wastes classified as 'hazardous wastes' under Subtitle C of RCRA include:

- certain specifically listed wastes;
- wastes that fail generic characteristics of toxicity, reactivity, corrosivity or flammability;
- certain mixtures of hazardous wastes and other solid wastes, and residues from treatment of hazardous waste; and
- media (eg, soil and debris) that contain hazardous waste.

Some states have adopted additional provisions that expand the generic characteristics of hazardous waste or the list of wastes identified as hazardous in that state.

RCRA creates a cradle-to-grave regulatory scheme, including detailed requirements for generators and transporters of hazardous wastes, as well as detailed design and operating standards for treatment, storage and disposal facilities, which generally require state or federal permits. RCRA requires that certain hazardous wastes meet treatment standards (incineration, stabilisation) before landfill disposal. Certain treatment standards are numerical and others require the use of certain treatment technologies. 'Universal' wastes, including batteries, certain suspended or cancelled pesticides, aerosol cans, light bulbs and lamps and mercury-containing equipment (some states have expanded this list) are subject to streamlined hazardous waste storage, labelling and transportation requirements. Municipal solid wastes and medical and infectious wastes are generally subject to state transportation and disposal requirements. The Act also imposes record-keeping requirements on disposers of hazardous waste. For hazardous waste storage, depending on the size and type of facility, RCRA regulations may impose accumulation time limits and technical standards (eg, for containers, tanks, drip pads or containment buildings), as well as training requirements, air emission limitations and the development of contingency plans and emergency procedures.

Under the HMTA, transporters of hazardous waste must obtain an EPA identification number and comply with EPA's hazardous waste manifest system. Exemptions exist for transporters of certain recycled or reclaimed hazardous wastes generated by small-quantity generators. Transporters must take certain actions in response to discharges or spills of hazardous waste. Transporters must also comply with applicable Department of Transportation regulations that apply to the transport of hazardous materials by rail, aircraft, water vessel or truck. These include record-keeping, training, manifest, labelling and packaging requirements. RCRA also restricts the export and import of hazardous waste.

RCRA and implementing EPA regulations and guidance exempt certain recyclable materials (including some by-products) and recycling activities from its hazardous waste regulations, generally if specified conditions are met. Recycling standards under RCRA range from full regulation to full exemption from regulation. Federal law does not mandate a circular economy or waste recycling in lieu of disposal. Under various state laws, extended producer responsibility requirements (including recycling targets) may apply for certain categories of products.

Regulation of air emissions

5 | What are the main features of the rules governing air emissions?

The CAA regulates air emissions from stationary and mobile sources and obliges the government to regulate air pollutants it determines may endanger public welfare. One of the main provisions of the CAA authorises EPA to establish National Ambient Air Quality Standards (NAAQS). To date, EPA has established NAAQS for six pollutants: particulate matter (coarse and fine), ozone, sulphur dioxide, nitrogen dioxide, carbon monoxide and lead. The CAA also requires EPA to regulate emissions of listed hazardous air pollutants (HAPs). States must adopt state implementation plans (SIPs) to achieve the NAAQS and to control emissions of criteria and hazardous pollutants within their boundaries.

Most facilities that produce air emissions are likely to be regulated by the CAA and must comply with federal and state requirements to meet or maintain the NAAQS. The act requires new or modified sources of air pollutants to obtain pre-construction approval. The pre-construction permit programme requires project proponents to demonstrate that emissions from the new or modified sources will not cause or contribute to an increase in air pollutants that would degrade air quality, and requires installation of certain levels of pollution control equipment depending on the area's air quality. Following construction, new or modified sources must obtain operating permits, which require compliance with equipment standards (eg, best available pollution control equipment) and emissions limits. These standards and limits vary based on facility type and the nature of emissions. Permitting thresholds, emissions limits and equipment standards are generally more stringent for sources emitting HAPs or located in NAAQS non-attainment areas. For certain actions, federal agencies must also demonstrate general conformity or transportation conformity to approved SIPs, thereby ensuring that those actions will not create or worsen air quality violations under the NAAQS.

Although EPA issues permits in some circumstances, most permits are issued by state or local air pollution control agencies under their SIP authority (with EPA oversight). Operating permits are generally required for larger sources and sources that are subject to new source performance standards, HAP standards and acid rain control requirements. Operating permits typically last for five years and include enforceable emissions standards and limitations (which vary by industry or source category), compliance schedules, and monitoring and reporting requirements.

Beyond stationary sources, EPA has broad authority over mobile sources including aircraft, on-road vehicles and non-road engines and equipment. It sets emission standards for vehicles, imposes testing and certification for engines and controls fuel formulations and additives. Passenger cars and light-duty trucks must meet tailpipe emission standards for various air pollutants and greenhouse gases (GHGs). In September 2019, EPA formally revoked California's unique ability to set stricter vehicle emissions standards, followed by about a dozen other states, but then reinstated California's authority in March 2022. In December 2021, following a re-evaluation of standards previously set, EPA issued new stricter standards for tailpipe carbon dioxide emissions for passenger cars and light-duty trucks for model years 2023 to 2026. The Department of Transportation followed by strengthening corporate average fuel economy standards in April 2022 for model year 2026. For aircraft, in August 2016, EPA finalised a finding that GHG emissions from certain classes of aircraft endanger human health and welfare. On 11 January 2021, EPA issued the first-ever Clean Air Act GHG emission standards for aircraft. Those standards apply to manufacturers of new aircraft and new aircraft engines, with compliance determined as part of the Federal Aviation Administration's airworthiness certification process. In November 2021, the Federal Aviation Administration published the US Aviation Climate Action Plan, which outlines the government's approach

to achieving net-zero emissions by 2050. The plan relies on more efficient aircraft and engine technologies, production and use of sustainable aviation fuels, advancements in airport operations, international cooperation, and support for climate science research.

The CAA also requires EPA to address ozone-depleting substances, acid rain and regional haze. In June 2019, EPA formally withdrew the Clean Power Plan (CPP) aimed at GHG emissions reductions from existing power plants nationwide, and replaced it with the Affordable Clean Energy (ACE) rule. In June 2022, the Supreme Court reviewed the DC Circuit's decision to vacate the ACE rule, which would have opened the door for further regulatory action by the Biden administration on power plant GHG emissions. The Supreme Court concluded that Congress did not grant EPA the authority to devise emission caps based on a goal to shift power generation from coal to renewable and natural gas. The EPA thus exceeded its power by enacting the CPP. Congress must now provide clear direction to the EPA in its delegation of authority before the agency can regulate greenhouse gas emissions as in the CPP. For further discussion of climate change issues, see the United States Climate Regulation chapter.

The US currently has no federal law setting energy efficiency standards or requiring energy audits for buildings. The government offers incentives for energy efficiency such as 179D Commercial Building Energy-Efficiency Tax Deduction. States and localities have promulgated green building standards, which generally are voluntary, and are exploring other means to make buildings more energy efficient.

Protection of fresh water and seawater

6 | How are fresh water and seawater, and their associated land, protected?

The CWA requires a permit for any person or entity to discharge either pollutants or dredged or fill material to waters of the United States (which include jurisdictional wetlands). EPA oversees the former; the US Army Corps of Engineers oversees the latter (subject to EPA veto). Individual states also maintain their own programmes regulating these discharges to surface waters, and may be delegated authority to implement the act within their borders. Industrial and municipal 'discharges' of wastewater and designated discharges of storm water to these waters that pass through a 'point source' and 'discharges' of fill material are subject to permitting. Permits must contain the more stringent of technology-based effluent limitations reflecting uniform national standards or effluent limitations designed to protect the water quality of the specific water body to which the discharge is made. The EPA also sets standards for different contaminants in drinking water through the Safe Drinking Water Act and monitors states, local authorities and water suppliers who enforce those standards. State law governs the extraction of water for consumptive use.

Protection of natural spaces and landscapes

7 | What are the main features of the rules protecting natural spaces and landscapes?

Several categories of federally owned and managed lands are set aside for conservation and recreational purposes and under various agencies' jurisdiction. Such designations are usually made by Congress pursuant to an organic statute and a site-specific statute, with the exception of the presidential designations of national monuments under the Antiquities Act. Other categories of protected areas include national parks, national wildlife refuges, national forests, wild and scenic rivers and wilderness areas. Each type of designation entails balancing predominant or multiple uses. For example, the ESA requires protection for designated critical habitat areas, while the Land and Water Conservation Fund (LWCF) invests earnings from offshore oil and gas leasing to conserve parks, wildlife refuges, forests, open spaces, trails and wildlife habitat. The Department of the Interior manages most public lands, including both onshore and the 1.7 billion acres of the Outer Continental Shelf. The Department of Agriculture manages national forests. Designated wilderness areas receive the most protection. Individual states and localities also have systems of protected areas.

Protection of flora and fauna species

8 | What are the main features of the rules protecting flora and fauna species?

The ESA provides for the protection and recovery of listed endangered and threatened plants and animals and the habitats upon which they depend. Absent a 'no effect' determination, each federal agency must engage in consultation to ensure that its actions are not likely to jeopardise the continued existence of the species, or result in destruction or adverse modification of the species' designated critical habitat. The ESA further prohibits anyone from 'taking' a listed species and from engaging in commerce in listed animals or plants or parts thereof. 'Taking' is broadly defined to include killing, capturing or destroying habitat. Some states have enacted legislation to protect endangered and threatened plants and animals (in addition to the federal ESA list) within those states. The Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act, and their respective regulations, also protect against certain actions, including 'taking' migratory birds and eagles.

In August 2019, the US Fish and Wildlife Service and National Marine Fisheries Service sought to reform the ESA implementation, including the rules for listing species, designating critical habitat, conducting interagency consultation and removing the automatic extension of take prohibitions to listed threatened species under the jurisdiction of the US Fish and Wildlife Service. However, in July 2022, a federal court rejected those regulatory changes, effectively reinstating regulations adopted in 2016, which had been challenged in litigation before being superseded by the 2019 rules. Separately, the services in June 2022 reversed a December 2020 rule narrowing the definition of 'habitat' for purposes of designating critical habitat. The services remain engaged in review and potential further revision of regulations implementing the ESA. Finally, on 4 October 2021, the US Fish and Wildlife Service reversed a January 2021 rule that had excluded incidental take from prohibition under the Migratory Bird Treaty Act, thereby again subjecting incidental take of migratory birds to prosecutorial discretion for enforcement.

Noise, odours and vibrations

9 | What are the main features of the rules governing noise, odours and vibrations?

Noise, odours and vibrations are primarily regulated, if at all, at the local or state level. Many states have noise pollution programmes, which vary widely. Local zoning laws and allowed activities also vary widely. Federal noise regulations cover standards for transportation equipment, air and motor carriers, low noise emission products and construction equipment, and are enforced by EPA or other designated federal agencies. Workplace exposure to noise, odours and vibrations is regulated by the US Occupational Safety and Health Administration. Under common law tort principles, private parties may bring nuisance actions for excessive noise, odours and vibrations.

Liability for damage to the environment

10 | Is there a general regime on liability for environmental damage?

There is no US generalised regime for environmental damages. Statutes, regulations and common law can impose various types of liability, including administrative, civil and criminal. Courts in turn establish

precedent for liability in cases arising under various environmental laws. Alleged violators may face government administrative actions, civil suits or citizen suits. Only the government can prosecute criminal liability in court.

The government generally follows proportional enforcement. Minor offences may trigger administrative or civil sanctions; more serious and intentional violations trigger more severe sanctions or even criminal charges. The government's burden of proof is highest in criminal cases. Some programmes, like Superfund, impose strict liability based on party status. RCRA authorises the government or private parties to seek relief for 'imminent and substantial endangerment' to the environment.

Environmental taxes

11 | Is there any type of environmental tax?

Most US environmental programmes are regulation based, not tax based. Some environmental tax programmes do exist. For example, the Oil Pollution Act established a federal trust fund to clean up oil spills, financed by a per-barrel tax collected from the oil industry. An underground storage tank trust fund is funded by taxes on certain motor fuels. A federal tax also applies to use or import ozone-depleting chemicals. The Surface Mine Control and Reclamation Act authorises a reclamation programme for abandoned mine land, which is funded by a coal tax. Environmental taxes are more prevalent on the state and local levels, including taxes relating to waste and battery disposal, chemicals, petroleum, tires, air emissions, oil spill response, litter control and water quality.

Environmental reporting

12 | Are there any notable environmental reporting requirements (eg, regarding emissions, energy consumption or related environmental, social and governance (ESG) reporting obligations)?

Since approximately 2010, EPA has required certain large emitters (eg, fuel and industrial gas suppliers, CO_2 injection sites) to annually report their GHG emissions data using specified methodologies and EPA's electronic reporting tool (see EPA's Greenhouse Gas Reporting Program, codified at 40 CFR Part 98). Following EPA's multi-step verification process, the annual data is then made available to the public.

There is currently no general system for comprehensive ESG reporting in the United States, although more targeted reporting requirements have been established within the social dimension of ESG, such as the Securities and Exchange Commission's (SEC) conflict minerals rule, the SEC's rule on disclosures relating to human capital management and the State of California's Transparency in Supply Chains Act. To date, most companies voluntarily reporting ESG information have been driven by customer, investor, NGO and other stakeholder expectations. The US appears poised, however, to transition to mandatory ESG reporting obligations, beginning with climate-related disclosures. In May 2022, the SEC proposed new disclosure and reporting requirements for investors concerning registered funds' and advisers' incorporation of [ESG] factors. The proposal, if finalised, would amend the rule under the Investment Company Act of 1941.

Meanwhile, Congress is considering legislation that would require disclosures relating to climate, ESG, political spending, tax havens and offshoring. For example, the Corporate Governance Improvement and Investor Protection Act (H.R. 1187), if enacted, would require publicly traded companies to periodically disclose ESG factors, including ESG performing metrics, climate change-related risks and workforce management policies. The bill would also establish the Sustainable Finance Advisory Committee, which must recommend policies to direct assets towards environmentally sustainable investments.

Government policy

13 | How would you describe the general government policy for environmental issues? How are environmental policy objectives influencing the legislative agenda?

Environmental policy is often a function of the presidential administration in power, which changes every four to eight years. Current environmental policy under the Biden administration is largely focused on reducing and adapting to climate change and improving environmental justice. There also are concerted efforts to undo the overall deregulatory environmental policy of the prior Trump administration, including on air emissions, species, wetlands and environmental reviews. These environmental policy objectives have manifested earliest in new guidance documents, newly proposed regulations by various federal agencies, and litigation briefing. On the legislative front, these environmental policy objectives are informing discussions on bills involving infrastructure (surface transportation, water resources and energy), sustainability, corporate reporting and agency budgets. For example, after the Trump administration in September 2020 updated regulations for NEPA environmental reviews of proposed federal agency actions, the Biden administration reversed some of them in April 2022, and plans to propose a broader reversal later in 2022. Certain environmental objectives that cannot be achieved via bipartisan legislation may be pursued via the budget reconciliation process, which is exempt from the 60-vote supermajority requirement in the Senate to overcome a filibuster. The Inflation Reduction Act of 2022 is such an example, and represents a major expansion of US environmental and climate policy.

HAZARDOUS ACTIVITIES AND SUBSTANCES

Regulation of hazardous activities

14 | Are there specific rules governing hazardous activities?

See the Resource Conservation and Recovery Act regarding the generation, treatment, storage, disposal and management of hazardous wastes; the Hazardous Materials Transportation Act for transport and handling of hazardous materials; and the Occupational Safety and Health Act of 1970 (OSHA 1970) for worker safety at facilities. OSHA 1970 also establishes specific standards for the construction, maritime and agriculture industries, designed to reduce on-the-job injuries and to limit workers' risks of developing occupational diseases from exposure to various air contaminants, asbestos and other substances.

Regulation of hazardous products and substances

15 | What are the main features of the rules governing hazardous products and substances?

Under TSCA, reporting, record-keeping and other requirements may apply to manufacturers (including importers), processors, distributors and users of chemical substances. Manufacturing a non-exempt new chemical substance (not on the inventory under the Act) is prohibited unless and until the US Environmental Protection Agency (EPA) makes an affirmative finding either that a chemical is not likely to present an unreasonable risk or that manufacture may begin subject to a compliance order imposing restrictions on the new chemical. Designated 'significant new uses' of approximately 2,800 chemicals are subject to similar notification and review requirements.

Following amendments to the act passed in 2016, EPA also has authority to:

- prioritise chemicals for in-depth review;
- conduct risk evaluations of high-priority chemicals; and
- regulate those chemicals found to present an unreasonable risk under the conditions of use.

EPA further may issue either orders or rules requiring testing by manufacturers and processors. For new chemicals (ie, not on the inventory), EPA must now make affirmative findings (eg, whether a chemical is likely to present an unreasonable risk under the conditions of use) with an order to follow if the 'likely to present' finding is made. EPA actions may pre-empt certain state restrictions on chemicals. Based on chemical manufacturer, importer, and processor submissions, EPA updates its inventory which identifies those chemical substances that are considered to be active. EPA is also prioritising chemicals for possible regulation pursuant to the 2016 statutory amendments to the act, and proposing changes to the existing regulations governing testing, risk evaluation, reporting, and significant new uses of chemical substances under TSCA to align these regulations with revisions to OSHA's Hazard Communications Standard (HCS).

The Consumer Product Safety Improvement Act 2008, implemented by the Consumer Product Safety Commission (CPSC), limits the levels of lead, phthalates and certain chemicals allowed in children's products. The CPSC also administers the Federal Hazardous Substances Act, which requires precautionary labelling to alert consumers to certain products' potential hazards. Moreover, the Federal Trade Commission has established 'green guides' for environmental marketing claims. States additionally have imposed requirements to regulate and restrict the sale of certain products containing specified hazardous substances.

Industrial accidents

16 | What are the regulatory requirements regarding the prevention of industrial accidents?

Under the 'general duty' clause of OSHA 1970, each employer is required to provide to employees a place of employment free from recognised hazards. The US Occupational Safety and Health Administration (OSHA) has promulgated numerous specific standards for industrial processes, establishing specific workplace practices as well as imposing training requirements. For instance, the OSHA's process safety management standard addresses hazards from the use of highly hazardous chemicals, and its hazardous waste operations and emergency response standard requires training and control measures for clean-up operations.

The Emergency Planning and Community Right-to-Know Act requires facilities to report chemical storage and release information, and also requires state and local governments to undertake emergency planning activities. In addition, under the Clean Air Act, facilities that produce, handle, process, distribute or store certain chemicals must prepare and submit a risk management plan to EPA. Certain facilities are also required to prepare, develop and implement oil spill prevention, control and countermeasure plans.

ENVIRONMENTAL ASPECTS IN TRANSACTIONS AND PUBLIC PROCUREMENT

Environmental aspects in M&A transactions

17 | What are the main environmental aspects to consider in M&A transactions?

Purchasers should:

- check the target facilities' regulatory compliance;
- conduct 'all appropriate inquiries' including evaluating the facilities' environmental conditions and potential liability and costs for onsite remediation; and
- evaluate potential liabilities associated with the current and historic generation and offsite disposal of wastes from the target's operations.

A share purchaser generally acquires all the corporate target's assets and liabilities, including the predecessor's environmental liabilities. An asset purchaser may be able to acquire the assets free of environmental liabilities arising from pre-closing regulatory non-compliance by the target and from historic offsite disposal.

Environmental aspects in other transactions

18 | What are the main environmental aspects to consider in other transactions?

The scope of many environmental laws has been interpreted quite broadly to impose liability on entities beyond the actual owner of a facility or business. For instance, lenders have been held liable in some circumstances for their borrower's environmental liabilities (although there are some defences and 'safe harbours' available for lenders). An entity acquiring contaminated real property (whether through a purchase, foreclosure or corporate restructuring) will be liable for the remediation of such contamination, even if the acquirer had nothing to do with the cause. The acquirer may have contractual indemnity or statutory rights of contribution from one or more prior owners, but government enforcement authorities can choose to seek recourse against the current owner. Transactions involving entities in bankruptcy present unique environmental issues. Environmental claims that 'continue' after a transaction or even after an entity emerges from bankruptcy, such as obligations to correct ongoing non-compliance and to remediate contaminated property, often are not discharged in the bankruptcy.

Environmental aspects in public procurement

19 | Is environmental protection taken into consideration by public procurement regulations?

National regulations require the US government to take into account certain environmentally preferable products in the procurement process. Some state and local governments also have procurement policies that favour environmentally preferable products. Moreover, certain environmental violations may result in a company being suspended or debarred from doing business with the US, state, or local government.

ENVIRONMENTAL ASSESSMENT

Activities subject to environmental assessment

20 | Which types of activities are subject to environmental assessment?

The National Environmental Policy Act (NEPA) requires environmental review of most discretionary federal agency actions, including approving, financing, assisting or conducting plans, projects or programmes, whether regional or site-specific. No industrial activity restriction exists; in fact, many major NEPA documents address the federal government's natural resource management decisions. Certain actions are exempt from NEPA, such as ministerial agency actions or where potentially duplicative environmental reviews are required. In some 'small handles' situations where only a small component or minor approval involves a federal nexus, NEPA might not apply to the larger project. Certain states have laws analogous to NEPA, which vary significantly.

In July 2020, the Council on Environmental Quality (CEQ) within the White House amended the nearly 40-year-old NEPA implementing regulations applicable across the federal government, including a renewed focus on which federal agency actions may be exempt from NEPA. Those regulations are now being challenged in litigation. As of June 2021, the Biden administration is reconsidering the 2020 regulatory amendments in a two-step process and delayed individual federal agencies' corresponding amendments of their own NEPA implementing

regulations specific to the specific types of respective activities that those agencies commonly undertake. In April 2022, CEQ restored some of the provisions modified in 2020, including changes to streamline the NEPA review process. CEQ intends to make 'broader changes' to NEPA in Phase 2, including for environmental justice and public participation.

Environmental assessment process

21 | What are the main steps of the environmental assessment process?

NEPA requires an environmental impact statement (EIS) for 'proposals for... major federal actions significantly affecting the quality of the human environment'. A less detailed environmental assessment (EA) may suffice for a federal agency action with insignificant or unclear impacts. Finally, categorical exclusions apply to categories of agency actions that do not significantly affect the environment individually or cumulatively. An agency can perform a more detailed review under NEPA than legally required, and is guided by agency-specific regulations implementing NEPA.

The lead federal agency is responsible for the NEPA review, and may invite assistance by cooperating or participating federal, state, tribal and local agencies with jurisdiction or special expertise. The lead agency may also hire and supervise third-party consultants, typically funded by the project proponent, to prepare the NEPA analysis. For an EIS, and often an EA, the lead agency will publish a notice of intent for the proposed action, conduct scoping of affected resources or values, prepare a draft analysis, and then finalise its analysis and decision. The project proponent and public may submit information and comments during this process, including typically a minimum 45-day comment period on the draft analysis. The adequacy of the final impact statement may be challenged in court. There is increasing legislative and regulatory focus, to facilitate and expedite NEPA reviews, on integration of NEPA with early planning efforts and with other environmental requirements for a given project. As described above, however, those rules remain somewhat in flux as of this writing.

REGULATORY AUTHORITIES

Regulatory authorities

22 | Which authorities are responsible for the environment and what is the scope of each regulator's authority?

The US Environmental Protection Agency (EPA) implements most national environmental statutes. The Department of the Interior and the US Forest Service implement a variety of laws addressing environmental review, wildlife and cultural and historic resources. The Clean Water Act (CWA) wetlands fill permits are issued by the US Army Corps of Engineers with EPA oversight. The US Department of Justice litigates cases arising under federal environmental and natural resources laws. State agencies issue most operations permits pursuant to authority delegated by EPA, and also share enforcement authority. States generally take the lead under the Clean Air Act, CWA, and the Resource Conservation and Recovery Act on inspections and enforcement, with EPA retaining significant 'overfiling' enforcement authority with regard to violations of these statutes at individual facilities. In other areas (eg, the Toxic Substances Control Act; the Federal Insecticide, Fungicide, and Rodenticide Act; and the Emergency Planning and Community Right-to-Know Act), EPA generally takes the lead on enforcement.

Investigation

23 | What are the typical steps in an investigation?

Although state and federal environmental agencies routinely conduct inspections of regulated facilities, comprehensive governmental investigations are not usually initiated as a result of most regulatory compliance issues. Many compliance issues, whether self-disclosed or identified as a result of an agency inspection, are resolved informally. If agency inspectors identify non-compliance through review of a regulated facility's records or an onsite inspection, under most circumstances agency personnel will initially discuss the alleged violations with facility personnel. If a regulatory agency initiates a comprehensive or even a limited investigation, it will typically make a site inspection, undertake testing, sampling or similar activities, conduct interviews of facility personnel and prepare a written report and notice of violation identifying the practices or events constituting alleged non-compliance. The facility is entitled to obtain split samples of materials removed by the agency for testing, to retain copies of records requested by the agency and to be represented by counsel throughout the investigation. Environmental agencies also have the power to initiate criminal investigations, which are generally brought when 'serious' environmental violations (which pose actual environmental harm or substantial risks of harm) are committed 'knowingly' or 'intentionally'. These criminal charges can be brought against the company, culpable or responsible individuals, or both. If criminal charges are brought against individuals in the federal system, the risks of an active prison sentence are real. With regard to companies, apart from substantial fines, the biggest adverse impact can arise from suspension or debarment from public contracting, which can also spill over into contractual bars imposed by the compliance requirements of larger corporations, which prohibit them from using vendors with corporate criminal records.

EPA investigations have been in decline for a decade, but that is expected to change. The Biden administration announced a $2.644 billion EPA budget, which among other things proposes increased civil enforcement, environmental compliance monitoring and criminal enforcement.

Administrative decisions

24 | What is the procedure for making administrative decisions?

Most administrative decision-making processes are open and allow for participation by interested parties and the general public. The procedural aspects of administrative decision-making vary based on a number of factors, including the agency involved (eg, federal or state), the type of decision (eg, individual permit or variance, enforcement) and the environmental statute under which the decision is made. Some administrative processes resemble a formal trial. More informal proceedings are decided on written submissions. Although procedures vary, the parties typically may use any type of evidence they deem relevant in administrative proceedings. There also are means to seal confidential information if applicable. Any subsequent court challenge to a final agency action is typically based on and limited to the same administrative record as before the agency.

Sanctions and remedies

25 | What are the sanctions and remedies that may be imposed by the regulator for violations?

Federal and state agencies may pursue injunctive relief and require the abatement or cessation of permit violations or environmental harm. Remedial steps may include installing equipment to control emissions, ceasing certain activities or revoking a permit or shutting down a facility. Many environmental statutes also authorise civil and criminal penalties,

often calculated on a per-day, per-violation basis. Agencies may – and sometimes must – issue warnings or notices of violations before taking more severe enforcement actions. An agency typically may pursue an administrative enforcement action or sue the violator in federal court.

Appeal of regulators' decisions

26 | To what extent may decisions of the regulators be appealed, and to whom?

Nearly all formal administrative decisions from environmental agencies can be appealed by the recipient. Appeals can be based on factual findings and legal conclusions and can also challenge the extent of the remedy imposed by the decision-maker. Administrative appeal procedures differ among agencies, including potential proceedings before an Administrative Law Judge or an agency appeals board. After exhaustion of administrative remedies, a final agency action may be appealed to a federal district court, or in some instances directly to a US court of appeals. Judicial review follows the Federal Rules of Civil Procedure, the Federal Rules of Appellate Procedure, and individual courts' local rules, and is deferential to agencies.

JUDICIAL PROCEEDINGS

Judicial proceedings

27 | Are environmental law proceedings in court civil, criminal or both?

Most violations trigger administrative or civil enforcement. In addition, a party may be prosecuted in a criminal case if that party has committed a knowing violation of the law or a permit (or in some cases, even a negligent violation). Civil regulators and criminal prosecutors have substantial discretion about whether and which charges to bring in response to environmental violations, but typically seek remedies commensurate with the underlying offence. Since the consequences associated with criminal charges are more severe, US law imposes a higher burden of proof for crimes (eg, 'beyond a reasonable doubt') as opposed to civil violations (eg, 'preponderance of the evidence' or 'more probable than not'). A party challenging a federal agency action on environmental grounds may bring a civil case in a proper federal district court or a specific (eg, appellate) court if the relevant statute so directs.

Powers of courts

28 | What are the powers of courts in relation to infringements of environmental law?

In civil cases brought by governmental entities or citizen plaintiffs to enforce environmental laws, courts are generally authorised to require violators of environmental legal requirements to pay penalties and to undertake injunctive relief to abate the violation or address the environmental impacts of the violation. In a criminal case, individual defendants who plead guilty or are convicted at trial can generally be ordered to pay a higher fine and serve time in prison. The primary factors that the US courts consider in imposing such a sentence include:

- the level of harm or danger imposed;
- the degree of the violations;
- the duration of the violations; and
- whether the violations required a substantial clean-up.

Under Federal Rule of Civil Procedural 65 and similar court rules and case law, courts may also grant a preliminary injunction or other interim relief to, for example, stay a challenged agency action or prevent a project from going forward during the litigation.

Civil claims

29 | Are civil claims allowed regarding infringements of environmental law?

Certain environmental statutes (eg, the CAA, CWA and RCRA) contain 'citizen suit' provisions authorising non-governmental entities to sue third parties for injunctive relief for violations. A private party claiming injury from hazardous activities also may seek damages or injunctive relief in a tort action. No contractual relationship among the private parties is necessary, but contracts can create obligations for compliance with environmental laws. The Administrative Procedure Act also generally enables citizen plaintiffs to file civil lawsuits challenging final agency actions, or omissions in some circumstances, as arbitrary and capricious or otherwise for failure to comply with procedural or substantive requirements of other laws.

Defences and indemnities

30 | What defences or indemnities are available?

In civil cases, potential defences frequently include:

- statutes of limitations (up to five years is common);
- ambiguity of statutory or regulatory language;
- compliance with a valid permit;
- factual defences; and
- limited statutory defences.

In criminal cases, additional defences often may include:

- lack of knowledge;
- the government's failure to meet its heightened burden of proof; and
- other constitutional arguments unique to criminal cases (eg, lack of fair notice or void for vagueness).

A liable party could have indemnity rights against other parties or be a party to contracts with other parties under which the violator in turn may seek recovery, but such indemnities do not shield the violator from liability to the government. In Superfund litigation, in which multiple parties can be liable, courts have generally held that liability is strict and joint and several (subject to potential 'divisibility' defences).

Directors' or officers' defences

31 | Are there specific defences in the case of directors' or officers' liability?

Routine environmental violations generally do not create officer and director liability. However, some federal environmental statutes, including the CAA, specifically state that an 'operator' or 'responsible corporate officer' can include 'any person who is senior management personnel or a corporate officer.' In addition, a number of reports submitted to the US Environmental Protection Agency and state agencies are required to include formal certifications (under oath) with regard to the accuracy of the information contained therein, which can provide the basis for claims against corporate officers.

More often, various theories under laws governing the internal governance of corporations and other business enterprises can support personal liability of corporate directors and officers under environmental and other public health laws – for example:

- the corporate veil is pierced;
- the director or officer personally participated in the improper activity; or
- the director or officer personally exercised substantial control and supervision over the activity in question.

US law generally does not permit liability based only on the corporate position or job title of director or officer. However, federal prosecutors can rely on a range of surrogates to prove the executive's knowledge. Therefore, criminal charges can be pursued when the directors or officers:

- are personally aware of, or involved in, the commission of a crime;
- aid and abet a crime;
- fail to prevent the commission of a crime by others within the corporation by either turning 'wilfully blind' or negligently supervising the conduct of those subject to their control; or
- fail to implement preventive measures to ensure that violations do not occur.

Directors' and officers' liability insurance and corporate indemnification can mitigate such liability.

Appeal process

32 | What is the appeal process from trials?

In the federal courts, a judgment from a trial-level federal district court is directly appealable to one of 12 federal circuit courts of appeals. From a circuit court of appeals, a party may petition the US Supreme Court to hear an appeal, but the Supreme Court's jurisdiction is discretionary and rarely exercised.

Each of the 50 states has its own court system, but generally there is a right of review from the trial level to an intermediate appellate court and then to the state's highest court. In many states, the highest court's jurisdiction is discretionary. State court systems vary as to the possible levels of appeal, but there are typically two or three levels of courts (although the jurisdiction of some courts of appeal may be discretionary).

INTERNATIONAL TREATIES AND INSTITUTIONS

International treaties

33 | Is your country a contracting state to any international environmental treaties, or similar agreements?

Yes. For example, regionally, the United States and Canada have a bilateral Air Quality Agreement. The United States is also party to the North American Agreement on Environmental Cooperation and the North American Free Trade Agreement and its side agreements, which have environmental aspects.

Multilaterally, the United States is party to, among other agreements: the 1972 Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter; the 1973 Convention on International Trade in Endangered Species of Wild Fauna and Flora; and the 1987 Montreal Protocol on Substances that Deplete the Ozone Layer. The State Department maintains a complete list of international agreements to which the United States is party. The United States is not a party to a number of other multilateral environmental agreements, generally for lack of certain domestic authority for which new legislation would be required before the United States could join, including: the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal 1989; the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade 1998; and the Stockholm Convention on Persistent Organic Pollutants 2001.

International treaties and regulatory policy

34 | To what extent is regulatory policy affected by these treaties?

With few exceptions, treaties are generally not given direct effect in US law. The United States has generally implemented its treaty obligations under multinational environmental agreements through national statutes and regulations. In some cases, this domestic authority has pre-dated the US international obligations and US law and policy make no direct reference to treaties. In other cases, however, the United States has enacted new legislation expressly to satisfy international obligations, and US policy under such laws is closely keyed to the developments under international agreements (eg, regulatory policy on ozone-depleting substances and the Montreal Protocol). As a general matter, federal agencies that are responsible for developing, implementing and enforcing US environmental regulatory policy are conscious of US obligations under international agreements, as well as of developments under agreements to which the United States is not yet a party.

UPDATE AND TRENDS

Key developments of the past year

35 | Are there any emerging trends or hot topics in environment law in your jurisdiction?

The election of President Biden in November 2020 and unified Democratic control of the Executive and Congress signalled a sea change in environmental law in the United States, just as the Trump administration had signalled a different sea change four years earlier. President Biden's campaign articulated a particularly strong commitment to the issues of climate change and environmental justice. Considering the tight margins in the 2020 election and the upcoming 2022 midterm election, the Biden administration has attempted to find bipartisan solutions on infrastructure, energy and other areas. The new administration is likely to continue confronting these issues while also prioritising job creation and new economic opportunities.

The divided Congress is likely to deter substantial changes in core environmental laws. However, Congress has recently passed significant legislation advancing infrastructure and associated environmental permitting and reviews. Enacted on 15 November 2021, the Bipartisan Infrastructure Law creates new programmes and funding addressing a range of topics related to environment, energy and climate policy, including codification of environmental streamlining initiatives. The Inflation Reduction Act, passed by Congress and signed by President Biden in August 2022, charts a new course in US energy and climate policy. Discussions surrounding a standalone environmental permitting improvement bill also remain ongoing.

On the regulatory side, the Biden administration has moved quickly to reverse the overall deregulatory agenda of the Trump administration. On 20 January 2021, President Biden issued the 'Executive Order on Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis' (EO 13990). In addition to setting out the Biden administration's policy priorities, EO 13990 targeted specific policies of the Trump administration. Furthermore, EO 13990 directs executive agencies to evaluate all regulations, orders and guidance documents issued under the Trump administration and consider suspending, revising or rescinding prior actions that are inconsistent with the Biden administration's agenda. As discussed above, the Biden Administration has already acted to reinstate pre-Trump-era ESA, NEPA, and other regulations to better align the regulations with Biden administration policies and priorities. The Fifth Circuit Court of Appeals overturned a lower court's preliminary injunction on use of the interim estimates of the social cost of greenhouse gases as directed by EO 13990.

Much of the Biden administration's early effort in the environmental sphere involves addressing climate change. President Biden has clearly articulated his expectation that all agencies will contribute towards the administration's effort to address severe climate impacts affecting communities across the United States. On 27 January 2021, President Biden issued the 'Executive Order on Tackling the Climate Crisis at Home and Abroad' (EO 14008). Importantly, EO 14008 established a National Climate Task Force, which includes every cabinet agency and a number of additional non-cabinet agencies with authority over environmental or scientific matters. The National Climate Task Force will greatly facilitate the deployment of a 'whole-of-government' approach to combating the climate crisis. On the international front, President Biden recommitted the United States to the Paris Climate Agreement, which aims to limit the global temperature increase to 2 °C above preindustrial levels.

To achieve its ambitious climate change goals, the Biden administration has emphasised clean energy. In addition to establishing a National Climate Task Force, EO 14008 set forth several substantive energy goals, including achieving net greenhouse gas neutrality for the electricity sector by 2035, doubling offshore wind production by 2035, and replacing federal state, local and tribal vehicle fleets with non-emitting vehicles. In April 2021, President Biden announced a new target, which is for the United States to achieve a 50 per cent reduction from 2005 levels in economy-wide net greenhouse gas pollution by 2030. To attain the energy goals, EO 14008 instructs relevant agencies to identify changes in siting and permitting processes that will facilitate production of renewable energy on public lands and waters. The Biden administration also continues to foster accelerated development of renewable energy and other preferred projects, while at the same time rolling back Trump administration steps to more broadly reduce project environmental review and permitting time frames and paperwork. A federal district court preliminarily enjoined implementation of EO 14008's pause of federal oil and gas lease sales, however.

The Biden administration has also taken a series of actions to prioritise environmental justice issues. EO 14008 established the White House Environmental Justice Advisory Council and the White House Environmental Justice Interagency Council, which will work together to develop a strategy to address current and historic environmental injustice. For example, the White House Environmental Justice Advisory Council released a report outlining recommendations to centre environmental justice in national policies and advance President Biden's environmental justice commitment. In addition, there will be an increase in environmental justice monitoring and enforcement through new or strengthened offices at the Environmental Protection Agency, the Department of Justice and the Department of Health and Human Services.

At the same time, the judicial branch of government continues to wield significant influence and power over environmental and climate policy. The many regulatory efforts and policy reversals have triggered significant amounts of litigation across the country, particularly under the Administrative Procedure Act. In several instances, ongoing challenges to Obama or Trump administration rules have been mooted or stayed to accommodate new litigation on superseding Trump or Biden administration regulatory actions. In some cases where new actions were struck down in court, the original challenges subsequently resumed. Other cases seek broad relief from industry for climate change impacts under common law theories. These cases will continue for the foreseeable future.

The Supreme Court and other federal courts have also increasingly scrutinised federal agency actions in the environmental arena. In particular, the Supreme Court's 30 June 2022 decision in *West Virginia v EPA* has narrowed the Biden Administration's ability to meet its environmental and climate goals by prohibiting EPA from mandating generation-shifting (from coal-fired power to renewable energy generation) measures under the existing CAA. In doing so, the Supreme Court relied upon a 'major questions' doctrine that could form the basis for further challenges to environment-related actions by agencies. The outcome of upcoming environmental cases will further erode or enable the ability of federal agencies to pursue environmental and climate objectives.

In reaction to the above federal environmental law developments, and those that can be expected in the future, additional environmental statutory and regulatory protection, as well as environmental enforcement, can be expected at the state and local levels, subject to their budgeting constraints. In addition, increased numbers of citizen suits by non-environmental and public health organisations will continue to be filed.

Other hot topics in US environment law include but are not limited to regulation of plastics, PFAS and other chemicals, mobile source emissions, protected species, wetlands, and environmental reviews. Certain types of projects, including pipelines and other large-scale infrastructure, also are frequent targets for litigation. Environmental law is also closely tied to trends in larger administrative law, including generally reduced judicial deference to federal agency decisions.

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MAIN CLIMATE REGULATIONS, POLICIES AND AUTHORITIES

International agreements

1 | Do any international agreements or regulations on climate matters apply in your country?

Australia is a party to the United Nations Framework Convention on Climate Change (UNFCCC), which it ratified in 1992.

Australia ratified the Paris Agreement in 2016. Under the Paris Agreement, on 16 June 2022 Australia reaffirmed its commitment to reach net zero emissions by 2050 and increased its targets from 26–28 per cent below 2005 levels by 2030 to 43 per cent below 2005 levels by 2030.

Australia ratified the Kyoto Protocol to the UNFCCC in 2007. Australia adopted a target of limiting Australia's GHG emissions growth over the first commitment period (2008–2012) to 108 per cent of 1990 levels and under the second commitment period (2013–2020) was 99.5 per cent of 1990 levels. Australia exceeded its first and second commitment period target. In 2016 Australia ratified the Doha Amendment to the Kyoto Protocol. The Doha Amendment came into force on 1 October 2020.

Australia is a party to the Cancun Agreements. Under the Cancun Agreements, Australia made a pledge to reduce GHG emissions by 5 per cent below 2000 levels by 2020, with conditional net emissions reduction of up to 15 per cent or 25 per cent depending on the extent of global action.

International regulations and national regulatory policies

2 | How are the regulatory policies of your country affected by international regulations on climate matters?

The provisions of an international treaty to which Australia is a party do not automatically form part of Australian law. Before that can happen, Parliament must pass legislation that incorporates the treaty's provisions into domestic law. Until the provisions are incorporated, the treaty does not operate as a direct source of individual rights and obligations.

Nonetheless, courts have viewed the ratification of treaties as positive statements by the Executive Government. In Minister of State for Immigration and *Ethnic Affairs v Teoh [1995] HCA 20* (7 April 1995), the High Court held that the ratification of a treaty, even without domestic implementation, is enough to give individuals a 'legitimate expectation' that government decision-makers will act in conformity with the treaty.

Moreover, courts often use international treaties to help in resolving ambiguities in legislation, and to guide the development of common law.

Main national regulatory policies

3 | Outline recent government policy on climate matters.

In Australia, climate policy is a polarising and political issue. Several proposals to establish an emissions trading scheme have been unsuccessful. On 27 July 2022, the newly elected Commonwealth Government introduced into Parliament the Climate Change Bill 2022. The bill, if passed, will legislate Australia's commitment to reduce greenhouse gas emissions by 43 per cent below 2005 levels by 2030 and net zero by 2050.

The Emissions Reduction Fund (ERF) is currently the Commonwealth government's central policy for limiting GHG emissions. The ERF is designed to provide an incentive for people to adopt new practices and technologies that will reduce their GHG emissions.

The government's other key climate policies are:

- the National Greenhouse and Energy Reporting (NGER) framework, which requires companies to report information about their GHG emissions;
- the Safeguard Mechanism, which encourages large facilities not to increase their emissions above 'baseline' levels;
- the Renewable Energy Target, which creates a financial incentive for people to invest in new large-scale renewable power stations and to install new small-scale systems; and
- the National Energy Productivity Plan, which aims to enhance energy productivity by 40 per cent between 2015 and 2030.

The Commonwealth government has also agreed in principle with the recommendations of the King Review, which provided a robust platform to expand the way Australia lowers emissions.

In addition, the Offshore Electricity Infrastructure Act 2021 (Cth) commenced on 2 June 2022, establishing a regulatory framework to enable the operation of offshore renewable energy projects, including offshore wind farms.

The state and territory governments also have their own climate policies. For example, the Queensland government has two key strategies to respond to climate change: the Queensland Climate Transition Strategy, which outlines how Queensland aims to transition to a zero net emissions future; and the Queensland Climate Adaptation Strategy, which outlines how Queensland is preparing for the current and future impacts of a changing climate.

Main national legislation

4 | Identify the main national laws and regulations on climate matters.

Australia's main national law on responding to climate matters is the National Greenhouse and Energy Reporting Act 2007 (Cth) (the NGER Act). The NGER Act introduced a national framework (the NGER Scheme) for reporting and disseminating company information about GHG emissions, energy production and energy consumption.

The first object of the NGER scheme (section 3(1)) is to introduce a framework that:

- informs government policy formulation and the Australian public;
- helps Australia to meet its international reporting obligations;
- assists Commonwealth, state and territory government programmes and activities; and

- avoids duplication of similar reporting requirements at the state and territory level.

The second object of the NGER Scheme is to establish a safeguard mechanism by ensuring that 'net covered emissions of greenhouse gases from the operation of a designated large facility do not exceed the baseline applicable to the facility' (section 3(2)). Included as GHGs under the NGER Scheme are carbon dioxide, methane, nitrous oxide, sulphur hexafluoride, and various hydrofluorocarbons and perfluorocarbons (section 7A). A covered emission is any release of a GHG, as defined, into the atmosphere as a direct result of an activity (National Greenhouse and Energy Reporting Regulations 2008 (Cth), regulation 2.23). A designated large facility is a facility that emits more than 100,000 tonnes of carbon dioxide equivalent (CO_2-e) GHGs in a financial year (NGER Act section 22XJ, National Greenhouse and Energy Reporting (Safeguard Mechanism) Rule 2015 (Cth) section 8).

The NGER Act provides for penalties for non-compliance. Most penalty provisions in the NGER Act impose civil penalties (eg, for providing false or misleading information to the Clean Energy Regulator under section 71(4)), but there are several that impose criminal penalties (eg, for refusing to comply with a request from an authorised officer during a warrant execution under section 61(3)). The NGER Act also provides for the issuing of infringement notices (section 39).

Other laws relating to climate matters are contained in:

- the Carbon Credits (Carbon Farming Initiative) Act 2011 (Cth) (the CFI Act);
- the Australian National Registry of Emissions Units Act 2011 (Cth) (the ANREU Act); and
- the Building Energy Efficiency Disclosure Act 2010 (Cth) (the BEED Act).

The Climate Change (National Framework for Adaptation and Mitigation) Bill 2020, which aimed to establish a national climate change adaptation and mitigation framework, and to establish the Climate Change Commission, was introduced to the Commonwealth Parliament on 9 November 2020, but was removed from the Notice Paper on 22 June 2021.

The Climate Change Bill 2022 and the Climate Change (Consequential Amendments) Bill 2022 were introduced to the House of Representatives on 27 July 2022, which aim to bring into Australia's domestic law Australia's emissions reduction targets and to provide for transparency and accountability of Australia's progress towards meeting these targets.

National regulatory authorities

5 Identify the national regulatory authorities responsible for climate regulation and its implementation and administration. Outline their areas of competence.

The main national regulatory authority is the Clean Energy Regulator (the Regulator). The Regulator is an independent statutory authority. It is responsible for administering the NGER Act, Australia's main national law on climate matters.

The Regulator also has administrative responsibilities for the Emissions Reduction Fund, under the CFI Act, the Renewable Energy Target under the RET Act, and the Australian National Registry of Emissions Units, under the ANREU Act.

GENERAL NATIONAL CLIMATE MATTERS

National emissions and limits

6 What are the main sources of emissions of greenhouse gases (GHG) (or other regulated emissions) in your country and the quantities of emissions from those sources? Describe any limitation or reduction obligations. Do they apply to private parties in your country?

In Australia, eight sectors are the biggest contributors to GHG emissions: electricity, transport, stationary energy (excluding electricity), agriculture, fugitive emissions, industrial processes and product use, waste, and land use, land use change and forestry (LULUCF). The following table sets out the amounts of CO_2-e GHG emissions each sector contributed in the year to December 2021.

	Annual emissions (Mt CO_2-e) year to December 2021
Electricity	160.4
Stationary energy	102.6
Transport	90.9
Fugitive emissions	50.8
Industrial processes and product use	32.5
Agriculture	77.2
Waste	13
LULUCF	–39.5
All sectors	488

This information is taken from the Australian government's quarterly update of Australia's national greenhouse gas inventory, December 2021.

Australia does not generally have mandatory limitation or reduction obligations. Instead, there is a range of incentive schemes in place to encourage emission reductions.

National GHG emission projects

7 Describe any major GHG emission reduction projects implemented or to be implemented in your country. Describe any similar projects in other countries involving the participation of government authorities or private parties from your country.

Australia has four main GHG emission reduction projects:

- the NGER Scheme;
- the Emissions Reduction Fund (ERF);
- the Safeguard Mechanism; and
- the Renewable Energy Target (RET).

In addition, the Offshore Electricity Infrastructure Act 2021 (Cth) commenced on 2 June 2022, establishing a regulatory framework to enable the operation of offshore renewable energy projects, including offshore wind farms.

The NGER Scheme provides a national framework for reporting and disseminating company information about GHG emissions, energy production and energy consumption. Corporations that meet a specified threshold must register under the framework and provide a report every year.

The ERF is designed to provide an incentive for businesses, landowners, state and local governments, community organisations and individuals to adopt new practices and technologies that will reduce emissions. The ERF operates by offering people the chance to earn Australian Carbon Credit Units (ACCUs). One ACCU is earned for each tonne of CO_2-e that a project stores or avoids. People can sell ACCUs to

generate income. ACCUs may be purchased by the government through a carbon abatement contract, or on the secondary market.

The Safeguard Mechanism encourages large facilities not to increase their emissions above 'baseline' levels (NGER Act Pt 3H). The Safeguard Mechanism requires the person or entity with operational control of the facility to keep their net direct emissions within 'baseline' levels. The Safeguard Mechanism only applies to businesses that are 'designated large facilities', which are facilities that directly emit more than 100,000 tonnes of CO_2-e per financial year.

The RET creates a financial incentive for people to invest in new large-scale renewable power stations and to install new small-scale systems (eg, household solar panels). The RET is designed to reduce GHG emissions in the electricity sector, and to encourage people to generate extra electricity from sustainable and renewable sources. Electricity retailers (and certain other entities) have a legal obligation to buy and surrender certificates to the Clean Energy Regulator on a quarterly basis. The certificates come in the form of large-scale generation certificates (LGCs) and small-scale technology certificates (STCs). Electricity retailers can purchase the LGCs from renewable energy power stations and STCs from small-scale energy producers, such as households with solar panels on their roofs.

DOMESTIC CLIMATE SECTOR

Domestic climate sector

8 | Describe the main commercial aspects of the climate sector in your country, including any related government policies.

The primary carbon market is created by the issue of Australian carbon credit units (ACCUs) by the Clean Energy Regulator. Anyone who has an account with the Australian National Registry of Emissions Units can acquire ACCUs. Transfers of title on the Registry give rise to the secondary market.

GENERAL GHG EMISSIONS REGULATION

Regulation of emissions

9 | Do any obligations for GHG emission limitation, reduction or removal apply to your country and private parties in your country? If so, describe the main obligations.

The only mandatory limitation on GHG emissions is the NGER Safeguard Mechanism. The Safeguard Mechanism requires certain large businesses to keep their GHG emissions below 'baseline' levels. The baseline levels are set by the Clean Energy Regulator. Only businesses that exceed the threshold of 100,000 tonnes of annual GHG emissions are subject to the Safeguard Mechanism. In practice, this only covers large businesses in the electricity generation, mining, oil and gas extraction, manufacturing, and waste sectors.

GHG emission permits or approvals

10 | Are there any requirements for obtaining GHG emission permits or approvals? If so, describe the main requirements.

In Australia, there is generally no direct system of GHG emission permits or approvals. Indirect regulation occurs through the state and territory environment and planning laws and impact assessment processes.

Oversight of GHG emissions

11 | How are GHG emissions monitored, reported and verified?

Under the National Greenhouse and Energy Reporting Act 2007 (Cth) (the NGER Act), certain corporations are required to report information about their GHG emissions and energy use.

For each financial year, certain corporations must provide a report to the Clean Energy Regulator relating to their GHG emissions, energy production and energy consumption (NGER Act section 19(1)).

The requirement to report applies to corporations that meet one or more of the thresholds for a financial year (the 'trigger year') (NGER section 12(1)). The thresholds are specified in section 13 of the NGER Act. In general, they relate to the amount of CO_2-e emitted, energy produced or energy consumed. For example, a corporation will meet a threshold if it emits 50,000 tonnes or more of CO_2-e per financial year (NGER Act section 13(1)(a)(iii)).

If a corporation meets a threshold, then it must register with the Emissions and Energy Reporting System (EERS) by 31 August following the reporting year in which they first meet an NGER threshold (statutory deadline). The EERS is a system created to receive reports on emissions and energy information. Corporations that are required to report to the EERS must do so by the statutory deadline.

The Clean Energy Regulator administers the EERS.

GHG EMISSION ALLOWANCES (OR SIMILAR EMISSION INSTRUMENTS)

Regime

12 | Is there a GHG emission allowance regime (or similar regime) in your country? How does it operate?

In Australia people can earn, buy and sell Australian carbon credit units (ACCUs). ACCUs are originally issued by the Clean Energy Regulator on behalf of the Australian government. One ACCU is earned for each tonne of CO_2-e that a project stores or avoids.

ACCUs exist as electronic entries in the Australian National Registry of Emissions Units (the Registry). This means that to own an ACCU, you need to have an account with the Registry. Each ACCU has an identification number.

An ACCU is personal property and does not have an expiry date. People can create equitable interests and security interests in ACCUs.

Registration

13 | Are there any GHG emission allowance registries in your country? How are they administered?

The Registry records who owns each ACCU. The Clean Energy Regulator is responsible for tracking the ownership and location of ACCUs through the Registry.

Obtaining, possessing and using GHG emission allowances

14 | What are the requirements for obtaining GHG emission allowances? How are allowances held, cancelled, surrendered and transferred? Can rights in favour of third parties (eg, a pledge) be created on allowances?

To own, buy or sell ACCUs, you must have an account with the Registry. It is free to register for an account, and you can register through the Clean Energy Regulator's website. The registration process is free and relatively simple, requiring you to acknowledge terms and conditions, provide basic information and contact details, and set a password.

TRADING OF GHG EMISSION ALLOWANCES (OR SIMILAR EMISSION INSTRUMENTS)

Emission allowances trading

15 | What GHG emission trading systems or schemes are applied in your country?

Australian carbon credit units (ACCUs) may be sold to the government through a carbon abatement contract, or to other entities on the secondary market. People can transfer the legal title in ACCUs by entry into an account in the Australian National Registry of Emissions Units (the Registry). Transfers of ACCUs are subject to requirements imposed by statute (specifically, the Australian National Registry of Emissions Units Act 2011 (Cth) (ANREU) and ANREU Regulations).

Expressions of interest for the development of an exchange-traded market for emissions offsets (the Australian Carbon Exchange) were issued by the Clean Energy Regulator in 2021.

On 30 June 2022, the Clean Energy Regulator issued a Public Interest Certificate in relation to the Australian Carbon Exchange procurement process. The effect is that if a complaint is lodged at any stage during the procurement process, the procurement process cannot be suspended. The purpose stated was due to the importance of the procurement for an Australian Carbon Exchange to support the Commonwealth government's intention to respond to climate change.

Currently ACCUs are traded via brokers in the over-the-counter market. In contrast, trading on the Australian Carbon Exchange would allow trading to occur via an online platform, and be 'reconciled' at the end of a day's trading. The Clean Energy Regulator anticipates that the Australian Carbon Exchange will increase market transparency, decrease transaction costs and provide an efficient supply of ACCUs to enable companies to comply with their voluntary emission reduction commitments at the lowest possible cost.

Trading agreements

16 | Are any standard agreements on GHG emissions trading used in your country? If so, describe their main features and provisions.

A Code of Common Terms exists for each of the two types of carbon abatement contracts. Carbon abatement contracts are contractual arrangements that people can enter into to sell ACCUs to the Clean Energy Regulator. There are two types of carbon abatement contracts: Fixed Delivery and Optional Delivery. Each type of contract has a Code of Common Terms which sets out the rights and obligations of the parties under the contract (see Fixed Delivery and Optional Delivery). The Code of Common Terms is non-negotiable, and anyone bidding for a carbon abatement contract must agree to it.

Under a Fixed Delivery contract, the contract holder agrees to provide the Clean Energy Regulator with a set number of ACCUs at a set price for the duration of the contract. Under an Optional Delivery contract, the contract holder has the right, but not the obligation, to sell ACCUs to the Clean Energy Regulator at an agreed price, within a set time.

SECTORAL REGULATION

Energy sector

17 | Give details of (non-renewable) energy production and consumption in your country. Describe any regulations on GHG emissions. Describe any obligations on the state and private persons for minimising energy consumption and improving energy efficiency. Describe the main features of any scheme for registration of energy savings and for trade of related accounting units or credits.

In Australia, non-renewable energy sources are black coal, brown coal, natural gas and oil. The following table gives electricity produced by fuel type in the 2019/2020 financial year, which is the latest for which information is available.

Fuel	Electricity produced (GWh)	Percentage
Black coal	111,873	42.2
Brown coal	33,649	12.7
Gas	55,216	20.8
Oil	4,509	1.7
All fossil fuels	205,247.9	77.4

The above information is taken from the Department of the Environment and Energy, Australian Energy Statistics (2021) Table O.

The following table gives electricity consumed by fuel type in the 2019/2020 financial year, which is the latest for which information is available. Electricity consumption is measured in petajoules (PJ). One PJ is equal to 278 GWh.

Fuel	Electricity consumed (PJ)	Percentage
Oil	2,241.2	37.3
Coal	1,706.6	28.4
Gas	1,647.2	27.4

The above information is taken from the Department of the Environment and Energy, Australian Energy Statistics (2021) Table C.

Other sectors

18 | Describe, in general terms, any regulation on GHG emissions in connection with other sectors.

Beyond the energy sector, the regulation of GHG emissions is generally left to the environment and planning legislation of each state and territory.

The regulation of GHG emissions in connection to the exploration and exploitation of oil, gas and minerals is the responsibility of each state and territory. The regulation is generally contained in each jurisdiction's environment and planning instruments. For example, in New South Wales (NSW), when the consent authority decides to grant a consent for a mining project, the consent authority has to consider imposing conditions on the consent to ensure that 'greenhouse gas emissions are minimised to the greatest extent practicable' (see State Environmental Planning Policy (Resources and Energy) 2021 (NSW) section 2.20) (Mining SEPP).

The Environmental Planning and Assessment Amendment (Territorial Limits) Bill 2019 (NSW) is currently before the NSW Legislative Assembly and if passed, will create a set of measures aimed at preventing the regulation of downstream scope 3 GHG emissions and easing the approval of modifications or new approvals for mining, petroleum production or extractive industries in NSW.

Separately, the Environmental Planning and Assessment Amendment (Climate Change Response) Bill 2022 was recently introduced to the NSW Legislative Assembly which, if passed, will insert climate change response principles and require the consent authority in determining a development application, to consider whether the granting of a development consent would be consistent with the climate change response principles.

On 16 March 2021, a permanent ban on hydraulic fracturing was enshrined in the Victorian Constitution (see Constitution Amendment (Fracking Ban) Act 2021 (Vic)). Enshrining the ban on fracking in the Constitution will make it more difficult for the Victorian legislature to reverse the bans against fracking and coal seam gas exploration and extraction in Victoria. Such amendments would now require the approval of a three-fifths majority of each House of Parliament, rather than a simple act of Parliament.

The regulation of GHG emissions in connection to transportation is contained in statutes directed at setting the standard for each mode of transport (eg, light vehicles, heavy vehicles, trains). For example, for light vehicles, the Commonwealth legislative instrument ADR 79/00 prescribes the exhaust and evaporative emissions requirements for light vehicles. At the state and territory level, each jurisdiction has its own Vehicle Standards Rules (VSRs) that regulate light vehicle emissions (eg, emissions from cars). All VSRs are based on the same set of model rules called the Australian Light Vehicle Standards Rules (ALVSR). For example, NSW's Road Transport (Vehicle Registration) Regulation 2017 (NSW) Schedule 2 section 13A(1) applies a modified version of the ALVSR. Although the ALVSR is not explicitly directed at GHG emissions, it does set out requirements to ensure that motor vehicles do not emit too much smoke (see Part 9).

RENEWABLE ENERGY AND CARBON CAPTURE

Renewable energy consumption, policy and general regulation

19 | Give details of the production and consumption of renewable energy in your country. What is the policy on renewable energy? Describe any obligations on the state and private parties for renewable energy production or use. Describe the main provisions of any scheme for registration of renewable energy production and use and for trade of related accounting units or credits.

In Australia, renewable energy is produced from hydro, wind, bioenergy and solar photovoltaic cells. Bioenergy includes energy produced from landfill biogas and industrial waste, among other things. The following table gives electricity produced by fuel type in the 2019/2020 financial year, which is the latest for which information is available.

Renewable energy production

Fuel	Electricity produced (GWh)	Percentage of all electricity production
Hydro	15,150	5.7
Wind	20,396	7.7
Bioenergy	3,352	1.3
Solar PV	21,033	7.9
All renewables	59,931	22.6

The above information is taken from the Department of the Environment and Energy, Australian Energy Statistics (2021) Table O.

The following table gives electricity consumed by fuel type in the 2019/2020 financial year, which is the latest for which information is available. Energy consumption is measured in petajoules (PJ). One PJ is equal to 278 GWh.

Renewable energy consumption

Fuel	Electricity consumed (PJ)	Percentage of renewable electricity production
Biomass	169.3	40.4
Municipal and industrial waste	4.0	1.0
Biogas	16.7	4.0
Biofuels	6.6	1.6
Hydro	54.5	13
Wind	73.4	17.5
Solar PV	75.7	18.1
Solar hot water	18.5	4.4
All renewables	418.8	100

The above information is taken from the Department of the Environment and Energy, Australian Energy Statistics (2021) Tables D, F, O.

Wind energy

20 | Describe, in general terms, any regulation of wind energy.

Planning and environment approvals may be required to construct or operate a wind energy project. For example, state and territory environment laws and laws that regulate land use approvals. In New South Wales (NSW), a tiered approvals regime for renewable energy systems exists, to ensure the level of assessment is appropriately tailored to the scale and type of the system. Under the State Environmental Planning Policy (Planning Systems) 2021 (NSW), electricity generating works, including renewable energy proposals such as wind farms, with a capital cost of more than A$30 million (or A$10 million in an environmentally sensitive area) are considered as State Significant Development under section 20. Under the State Environmental Planning Policy (Transport and Infrastructure) 2021 (NSW) (the Infrastructure SEPP), there are a range of assessment pathways for small-scale renewable energy proposals, which are tailored to the size, location and level of environmental impact of the proposal. Small-scale renewable energy systems covered by the Infrastructure SEPP include small wind turbine systems and wind monitoring towers.

Government schemes exist to encourage the development of renewable power stations like wind farms. The Clean Energy Regulator administers the Renewable Energy Target (RET) Scheme, which includes the Large-scale Renewable Energy Target (LRET). This target creates a market for the creation and sale of certificates known as large-scale generation certificates (LGCs). Certain accredited power stations can create LGCs for electricity generated from its renewable energy sources, such as wind. The LGCs can then be sold to electricity retailers (and other entities with certain liabilities) to meet their compliance obligations. The LGCs operate as offsets to energy use and GHG emissions.

Another part of the RET Scheme is the Small-scale Renewable Energy Target. This target creates a financial incentive for individuals and small businesses to install certain small-scale renewable energy systems, such as small-scale wind systems. This scheme creates small-scale technology certificates (STCs), which energy retailers can use to discharge their RET compliance obligations.

In addition, the Offshore Electricity Infrastructure Act 2021 (Cth) commenced on 2 June 2022 which established a regulatory framework to enable the operation of offshore renewable energy projects, including offshore wind farms.

Solar energy

21 | Describe, in general terms, any regulation of solar energy.

Planning and environment approvals may be required to construct or operate a solar energy project. In NSW, a tiered approvals regime for renewable energy systems exists to ensure the level of assessment is appropriately tailored to the scale and type of the system. Under the State Environmental Planning Policy (Planning Systems) 2021 (NSW), electricity generating works, including renewable energy proposals such as solar farms, with a capital cost of more than A$30 million (or A$10 million in an environmentally sensitive area) are considered as State Significant Developments under section 20. There is a range of assessment pathways for small-scale renewable energy proposals, which are tailored to the size, location and level of environmental impact of the proposal. Small-scale renewable energy systems covered by the Infrastructure SEPP include photovoltaic systems, solar hot water systems and solar air heating systems.

Government schemes exist to encourage the development of renewable power stations, such as solar farms. One such scheme is the LRET, which is administered by the Clean Energy Regulator. This scheme creates a market for the creation and sale of LGCs. Certain accredited power stations can create LGCs for electricity generated from its renewable energy sources such as solar (see Renewable Energy (Electricity) Act 2000 (Cth) section 17(1)(f)). Once someone has created an LGC, they can then sell it to electricity retailers (and other entities with certain liabilities) to meet their compliance obligations. The LGCs operate as offsets to energy use and GHG emissions.

Another part of the RET Scheme is the Small-scale Renewable Energy Target. This target creates a financial incentive for individuals and small businesses to install certain small-scale renewable energy systems, such as solar panel systems and solar water heaters. Energy retailers can use STCs to discharge their RET compliance obligations.

Financial incentives are currently offered by some state governments for the installation of solar power systems. The NSW government recently introduced its Empowering Homes programme – a scheme that is designed to assist eligible NSW residents to decrease their power bills by providing interest-free loans of up to A$9,000 for a battery system or up to A$14,000 for solar and battery systems. This scheme is currently running as a pilot in limited NSW regions and will then be rolled out state-wide.

Hydropower, geothermal, wave and tidal energy

22 | Describe, in general terms, any regulation of hydropower, geothermal, wave or tidal energy.

Planning and environment approvals may be required to construct or operate hydropower, geothermal, wave or tidal energy projects. For example, in South Australia, the production of geothermal energy is a regulated activity under the Petroleum and Geothermal Energy Act 2000 (SA), and as such requires an environmental impact report. For another example, if a proposed tidal energy project affects a Commonwealth marine area (or on another matter of national significance), then the project may require assessment under the Environment Protection and Biodiversity Conservation Act 1999 (Cth).

Government schemes exist to encourage the development of renewable power stations, such as hydropower, geothermal, wave and tidal energy projects. One such scheme is the LRET, which establishes a market for the creation and sale of LGCs. Certain accredited power stations can create LGCs for electricity generated from their renewable energy sources. Renewable energy sources are defined to include hydro, wave, tide, ocean and geothermal-aquifer (see RET Act sections 17(1)(a)–(d), (g)). Once someone has created an LGC, they can then sell it to electricity retailers (and other entities with certain liabilities) to meet their compliance obligations. The LGCs operate as offsets to energy use and GHG emissions.

Waste-to-energy

23 | Describe, in general terms, any regulation of production of energy based on waste.

Planning and environment approvals may be required to construct or operate a waste-to-energy project.

Government schemes exist to encourage the development of renewable power stations such as waste-to-energy projects. The Clean Energy Regulator administers the LRET, which establishes a market for the creation and sale of LGCs. Certain accredited power stations can create LGCs for electricity generated from its renewable energy sources. Renewable energy sources are defined to include agricultural waste, food waste, bagasse, black liquor and gases from landfill and sewage (see RET Act sections 17(1)(j)–(s)). Once someone has created an LGC, they can then sell it to electricity retailers (and other entities with certain liabilities) to meet their compliance obligations. The LGCs operate as offsets to energy use and GHG emissions

Biofuels and biomass

24 | Describe, in general terms, any regulation of biofuel for transport uses and any regulation of biomass for generation of heat and power.

The use of biofuels for transport is regulated at the state and territory level. Two states, Queensland and New South Wales (NSW), have introduced biofuel mandates. For example, in NSW, service stations and other volume fuel retailers must make sure that ethanol is at least 6 per cent of all petrol sold and that biodiesel is at least 2 per cent of all diesel sold. Planning and environment approvals may be required to construct or operate a biomass energy project.

Government schemes exist to encourage the development of renewable power stations such as those fuelled by biomass. The Clean Energy Regulator administers the LRET, which establishes a market for the creation and sale of LGCs. Certain accredited power stations can create LGCs for electricity generated from its renewable energy sources. Eligible energy sources include biomass-based components of municipal solid waste (see RET Act section 17(1)(q)). Once someone has created an LGC, they can then sell it to electricity retailers (and other entities with certain liabilities) to meet their compliance obligations. The LGCs operate as offsets to energy use and GHG emissions.

Carbon capture and storage

25 | Describe, in general terms, any policy on and regulation of carbon capture and storage.

There are currently few large-scale carbon capture and storage (CSS) projects in Australia. Planning and environment approvals may be required to construct or operate CCS projects.

Australia is involved in the Carbon Sequestration Leadership Forum (CSLF). The CSLF is an international, ministerial-level climate change initiative for the development of improved and cost-effective technologies for CCS. Another Commonwealth government initiative is the Carbon Capture and Storage Flagships programme, which promotes the use of CCS technologies by supporting selected demonstration projects that capture carbon dioxide emissions from industrial processes, provide transport infrastructure and can store carbon dioxide underground in stable geological formations.

CLIMATE MATTERS IN TRANSACTIONS

Climate matters in M&A transactions

26 What are the main climate matters and regulations to consider in M&A transactions and other transactions?

In the absence of a formal carbon trading system in Australia, the nature of climate-related matters and regulations relevant to M&A transactions is predominantly driven by the subject matter of the transaction.

There are generally five categories of M&A transactions where climate change is a key consideration. Those categories comprise transactions relating to:

- renewable energy (eg, wind and solar);
- abatement projects (eg, carbon capture and storage projects);
- high-emission industries (eg, traditional electricity generation, mining, manufacturing);
- industries directly impacted by the effects of climate change (eg, agriculture); and
- value-linked assets (eg, sustainable brands).

Beyond value or price-related matters, the key regulations relevant to M&A transactions are:

- the Emissions and Energy Reporting System under the National Greenhouse and Energy Reporting Act 2007 (Cth);
- the Emissions Reduction Fund under the Carbon Credits (Carbon Farming Initiative) Act 2011 (Cth) and the Carbon Credits (Carbon Farming Initiative) Rule 2015 (Cth);
- the potential impact of a carbon price and tax (in the future);
- the conditioning of development approvals under Commonwealth and state environment and planning approvals; and
- the future development restraints that are consequences of climate change regulation (eg, coastal land may no longer be made available for development, and climate change may become a mandated consideration and assessment issue in the approvals process).

UPDATE AND TRENDS

Emerging trends

27 Are there any emerging trends or hot topics that may affect climate regulation in your country in the foreseeable future?

The climate change policies of the major Australian political parties differ considerably. For example, there is limited consensus on issues such as a carbon price or tax, emissions reductions targets, renewable energy, the role of coal and gas, and electricity generation. The limited consensus affects and constrains policy development. This variability of policy and lack of consensus will continue to be an ongoing theme in Australia's regulation of climate change.

The Department of Climate Change, Energy, the Environment and Water is leading the development of Australia's Long-term Emissions Reduction Strategy. Australia's Technology Investment Roadmap, which aims to accelerate the development and commercialisation of new and emerging low-emissions technologies, will be a core element of this strategy.

A further trend is the increase in the involvement of states in regulating climate change. This includes establishing policy frameworks at a state level, including reduction targets. For example, New South Wales has the Net Zero Plan, NSW Climate Change Fund and the Climate Change Policy Framework. Similarly, Queensland has a Climate Change Response with a view to achieving net zero emissions by 2050, Victoria has climate change policies through the Department of Environment, Land, Water and Planning and South Australia recently developed the South Australian Government Climate Change Action Plan 2021–2025 to, among other things, facilitate the reduction of greenhouse gas emissions.

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MAIN CLIMATE REGULATIONS, POLICIES AND AUTHORITIES

International agreements

1 | Do any international agreements or regulations on climate matters apply in your country?

The EU is a party to the United Nations Framework Convention on Climate Change (UNFCCC), the Paris Agreement, the Kyoto Protocol, the Vienna Convention for the Protection of the Ozone Layer, and the Montreal Protocol.

International regulations and national regulatory policies

2 | How are the regulatory policies of your country affected by international regulations on climate matters?

The EU actively participates in the elaboration, ratification and implementation of its multilateral environmental agreements (including the UNFCCC, Paris Agreement and Kyoto Protocol).

In response to the Kyoto Protocol, the European Commission established the European Climate Change Programme. The purpose was to determine policies that would ensure that the EU meets its target for reducing emissions under the Kyoto Protocol. Furthermore, the EU is committed to ensuring the successful implementation of the Paris Agreement. To this end, member states have agreed to meet several targets in the coming years. This is reflected in EU legislation and legislative proposals issued or envisaged in the context of the European Green Deal, including Regulation (EU) 2021/1119 (the European Climate Law) (enshrining the 2050 climate-neutrality objective into EU law) and the 2030 Climate Target Plan (providing for a further reduction of net greenhouse gas (GHG) emissions by at least 55 per cent by 2030). A key tool to reduce its GHG emissions is the EU's Emissions Trading System. Furthermore, the commitment under the Kyoto Protocol for the land use, land-use change and forestry sector to have no net emissions is enshrined in Regulation (EU) 2018/841 (the LULUCF Regulation). The EU is promoting global action through the UNFCCC, other international fora (such as the Intergovernmental Panel on Climate Change, G8 and G20, and the Major Economies Forum on Energy and Climate) as well as through bilateral arrangements with other countries or regions.

Main national regulatory policies

3 | Outline recent government policy on climate matters.

The European Commission wants the EU to play a leading role in implementing the Paris Agreement and the efforts to reduce GHG emissions. In this regard, the Commission presented the European Green Deal on 11 December 2019, where member states agreed that the EU should eventually become climate neutral by 2050.

The European Green Deal covers all sectors of the economy, notably transport, energy, agriculture, buildings, and industries such as steel, cement, ICT, textiles and chemicals. Combating climate change is to be achieved by making more use of renewable energy sources, such as wind power and solar power.

The main initiatives under the European Green Deal include the European Climate Law; the European Climate Pact to engage citizens and all parts of society in climate action; the 2030 Climate Target Plan; the new EU Strategy on Climate Adaptation to make Europe a climate-resilient society by 2050, fully adapted to the unavoidable impacts of climate change; and the revision of Directive (EC) 2003/96 (the Energy Taxation Directive) to align the taxation of energy products and electricity with EU energy and climate policies to contribute to the EU 2030 energy targets and climate neutrality by 2050.

In July 2021, just a few weeks after the adoption of the European Climate Law, the Commission presented a package of concrete legislative proposals, under the heading of 'Fit for 55', which should help to achieve these targets. In particular, the package seeks to update a number of pieces of EU climate legislation, setting forth specifically how the Commission intends to meet the aforementioned EU climate targets.

Main national legislation

4 | Identify the main national laws and regulations on climate matters.

The European Climate Law was adopted on 30 June 2021 and aims to reduce GHG emissions by 55 per cent in 2030 compared to 1990 levels and to achieve the EU's objective of becoming climate neutral by 2050.

Directive 2003/87/EC (the EU ETS) sets out the framework for the EU Emissions Trading System.

Regulation (EU) 2018/842 (the Effort Sharing Regulation) contains binding annual GHG emission targets for each member state for the period 2021–2030, based on the principles of fairness, cost-effectiveness and environmental integrity.

Regulation (EU) 2018/841 (the LULUCF Regulation) contains the binding 'no debit' rule, meaning that each member state must ensure that accounted emissions from land use are entirely compensated by an equivalent accounted removal of CO_2 from the atmosphere through action in the sector.

Regulation (EC) 1005/2009 (the EU Ozone Regulation) generally prohibits the use of ozone-depleting substances (subject to exceptions).

Regulation (EU) 517/2014 (the F-gas Regulation) imposes limits on the amount of F-gases that can be sold in the EU, bans the use of F-gases in several new types of equipment and imposes requirements that prevent emissions from F-gases from existing equipment.

National regulatory authorities

5 Identify the national regulatory authorities responsible for climate regulation and its implementation and administration. Outline their areas of competence.

This is regulated on a member state level.

GENERAL NATIONAL CLIMATE MATTERS

National emissions and limits

6 What are the main sources of emissions of greenhouse gases (GHG) (or other regulated emissions) in your country and the quantities of emissions from those sources? Describe any limitation or reduction obligations. Do they apply to private parties in your country?

According to publicly available figures from 2019, energy-producing industries, fuel combustion by energy users (excluding transport) and the transportation sector concurrently emit the most GHGs, with 25.8 per cent of the emissions share each.

Regarding GHG limitation and reduction obligations, Directive 2003/87/EC (the EU ETS) and Regulation (EU) 2018/842 (the Effort Sharing Regulation) are of importance.

The EU ETS applies to emissions from the activities listed in its Annex I (ie, installations in the power sector and manufacturing industry, as well as airlines operating in the EEA) and GHGs listed in Annex II (ie, carbon dioxide, nitrous oxide, perfluorocarbons, methane hydrofluorocarbons and sulphur hexafluoride). More specifically, the EU ETS covers about 40 per cent of the EU's GHG emissions. The EU ETS limits the emissions by setting a cap on the total amount of certain GHGs that can be emitted by the installations that fall within its scope (ie, it applies to private parties).

The other 60 per cent of the EU's GHG emissions are mostly covered by the Effort Sharing Regulation. This Regulation applies in particular to GHG originating from the following sectors: energy, industrial processes and product use, agriculture and waste, but excluding the emissions from the activities listed in Annex I of the EU ETS. It confers annual emission allocations upon each member state for the years 2021 to 2030.

Full data may be found at https://ec.europa.eu/eurostat/cache/infographs/energy/bloc-4a.html.

National GHG emission projects

7 Describe any major GHG emission reduction projects implemented or to be implemented in your country. Describe any similar projects in other countries involving the participation of government authorities or private parties from your country.

The Innovation Fund aims to fund a diverse project pipeline that achieves an optimal balance of a wide range of innovative technologies across all qualifying industries and member states, as well as Norway and Iceland. Between 2020 and 2030, the Innovation Fund will provide roughly €20 billion in support for the commercial demonstration of innovative low-carbon technologies, with the goal of bringing to market industrial solutions to decarbonise Europe and help its transition to climate neutrality. In particular, the Innovation Fund focuses on highly innovative technologies and large-scale flagship projects in the EU that can result in significant reductions in emissions.

The Innovation Fund forms the successor of the NER 300 Programme, which funded, inter alia, the onshore wind project Windpark Handalm in Austria (consisting of 13 windmills and producing around 76 MWh a year) and the two offshore wind projects Nordsee and Veja Matein in Germany (with respective capacities of 332 MWh and 402 MWh).

The Life Climate Change Mitigation and Adaptation programme is a programme that administers approximately €905 million that is used to develop and execute innovative solutions for climate challenges. It particularly supports the implementation of the European Green deal. It is divided into four subcategories: 'Nature and biodiversity', 'Circular economy and quality of life', 'Climate change mitigation and adaptation' and 'Clean energy transition'.

DOMESTIC CLIMATE SECTOR

Domestic climate sector

8 Describe the main commercial aspects of the climate sector in your country, including any related government policies.

On 12 July 2020, Regulation (EU) 2020/852 (the Taxonomy Regulation) entered into force, establishing the basis for the EU taxonomy by setting out several overarching conditions that an economic activity has to meet to qualify as environmentally sustainable. The EU taxonomy provides relevant definitions for which economic activities can be considered environmentally sustainable to enterprises, investors and policymakers. As a result, it should provide investors with security, shield private investors from greenwashing, assist businesses in becoming more climate-friendly, reduce market fragmentation, and assist in shifting investments to where they are most needed.

Furthermore, sustainability considerations have become key factors in assessing investment opportunities in the financial markets. In this framework, the EU has enacted the Disclosures Regulation (Regulation (EU) 2019/2088), which essentially requires manufacturers of financial products and financial advisers to disclose information on sustainability with regard to the investment towards the end-investors.

On a similar note, the EU enacted Directive (EU) 2014/95 (the NFRD) setting forth disclosure obligations for certain large companies on non-financial information, including environmental matters. The Commission has also published (non-binding) climate reporting guidelines for companies more generally.

In addition, we refer to Directive 2003/87/EC (the EU ETS) – this creates a commercial market between operators of installations that are subject to the EU ETS for the trade of emission allowances.

Finally, the EU has a number of funding possibilities in the energy sector that promote projects that benefit the environment (by reducing greenhouse gas emissions, by using renewable energy, by developing innovative solutions for clean energy, etc). These include the EU's Cohesion Fund, Horizon 2020 and Horizon Europe as well as the LIFE programme and the Innovation Fund.

GENERAL GHG EMISSIONS REGULATION

Regulation of emissions

9 Do any obligations for GHG emission limitation, reduction or removal apply to your country and private parties in your country? If so, describe the main obligations.

Directive 2003/87/EC (the EU ETS) and Regulation (EU) 2018/842 (the Effort Sharing Regulation) are mainly of importance regarding GHG limitation and reduction obligations.

The EU ETS applies to emissions from the activities listed in its Annex I and GHG listed in its Annex II. More specifically, the EU ETS covers about 40 per cent of the EU's GHG emissions.

The EU ETS limits the emissions by setting a cap on the total amount of certain GHGs that can be emitted by the installations. This cap is gradually dropped, ensuring that overall emissions are reduced. Within the EU ETS framework, operators of installations can buy or receive emissions allowances and are able to trade such allowances

with other operators. The EU ETS is currently in Phase IV, meaning that the cap on the total amount of emissions is annually decreased at a rate (ie, the linear reduction factor) of 2.2 per cent. Furthermore, to address the current surplus of allowances and improve the system's resilience to a major shock, the Market Stability Reserve was created by Decision (EU) 2015/1814. It transfers unallocated allowances to a reserve since 2019.

The EU's GHG emissions from activities that are not within the scope of the EU ETS are mostly covered by the Effort Sharing Regulation. This Regulation applies in particular to GHG emissions originating from the following sectors: energy, industrial processes and product use, agriculture and waste, but excluding the emissions from the activities listed in Annex I of the EU ETS.

To fulfil the EU's target of reducing its GHG emissions by 30 per cent below 2005 levels in 2030 for sectors not covered by ETS, this Regulation confers annual emission allocations upon each member state for the years 2021 to 2030. These are binding annual limits to the GHG emissions of a member state. This is not to be confused with the allowances (at the level of the installations) and total cap foreseen in the EU ETS.

GHG emission permits or approvals

10 | Are there any requirements for obtaining GHG emission permits or approvals? If so, describe the main requirements.

The EU ETS requires member states to introduce a GHG emissions permit system for operators of certain activities. In particular, member states must ensure that, from 1 January 2005, no installation carries out any activity listed in Annex I of the EU ETS resulting in emissions specified in relation to that activity unless its operator holds a permit issued by a (national) competent authority.

The application to the competent authority for a GHG emissions permit must include a description of the following:

- the installation and its activities;
- raw and auxiliary materials whose use is likely to result in emissions of the gases listed in Annex I;
- the sources of emissions of gases; and
- the measures planned to monitor and report emissions.

Only if the competent authority is satisfied that the operator is capable of monitoring and reporting emissions will it issue a GHG emissions permit authorising the emission of GHGs from all or part of an installation. In this regard, the operator is subject to a formal monitoring plan.

The permit contains, inter alia, a description of the activities and emissions from the installation, monitoring requirements and reporting requirements.

Oversight of GHG emissions

11 | How are GHG emissions monitored, reported and verified?

At the level of private operators

The operators of the installations that are covered by the EU ETS are required to have an approved monitoring plan for monitoring and reporting annual emissions. This plan is also included in the GHG emissions permit. Each year, operators must monitor and report on their emissions. In addition, they must surrender enough allowances to cover their annual emissions. In this regard, operators must submit an emissions report. The data submitted will then be verified by an accredited verifier by 31 March of the following year.

At the level of the member states

In accordance with Regulation 2018/1999/EU (the Governance Regulation) member states are required to develop long-term, integrated national energy and climate plans. The first of these plans had to be drafted by the end of 2019, with the aim of foreseeing the energy needs and developments of a member state for the next 10 years.

The plan structure should follow article 3 and Annex I of the Governance Regulation. The implementation of these plans by member states will be the subject of biennial reports to the Commission. As such, the member states are required to monitor their emissions and report on their emissions in line with the EU's internal reporting rules. These reporting rules are based on the reporting obligations included in the United Nations Framework Convention on Climate Change, the Kyoto Protocol and the Paris Agreement. This reporting covers, among others, seven GHGs from all sectors – referred to as the 'greenhouse gas inventory'.

In addition, the member states have strong monitoring and annual reporting obligations under Decision No. 406/2009/EC (the Effort Sharing Decision), which implements the Effort Sharing Regulation.

GHG EMISSION ALLOWANCES (OR SIMILAR EMISSION INSTRUMENTS)

Regime

12 | Is there a GHG emission allowance regime (or similar regime) in your country? How does it operate?

Directive 2003/87/EC (the EU ETS) provides for a GHG emissions allowance regime. Within the cap, operators obtain or acquire emission allowances, which they can trade as needed. Each allowance gives the holder the right to emit one tonne of carbon dioxide, or the equivalent amount of other powerful GHGs, nitrous oxide and perfluorocarbons. The allocation of allowances is done by free allocation, where operators of installations obtain allowances at no cost, or through auctioning.

The allowances are auctioned three times a week via EEX, an auction platform that has been appointed as the common auction platform by the European Commission. Companies that match the auction platform's criteria are eligible to participate in the auction. Bidders in joint European auctions include investors, banks and credit organisations.

At the level of the member states

Regulation (EU) 2018/842 (the Effort Sharing Regulation) provides for annual emission allocations to the member states. The national targets are based on member states' relative wealth, measured by gross domestic product per capita.

Registration

13 | Are there any GHG emission allowance registries in your country? How are they administered?

The GHG emissions allowances are registered and administered at EU level in the Union Registry. The Union Registry is managed by a central administrator and is used by member states to ensure accurate allowance accounting and transaction recording.

The Union Registry keeps track of, inter alia, accounts of companies or individuals holding emission allowances, transfers of allowances (transactions) and verified emissions, where each company or individual must have surrendered enough allowances to cover all its verified emissions.

To participate in the EU Emissions Trading System, companies or individuals must open an account in the Union Registry. To open an account, they must first submit a request to the national administrator of their member state, who will collect and review all supporting documentation. After opening the account, they can log in to the Union Register, where they can access their accounts and transfer emission allowances to other accounts via transactions.

Obtaining, possessing and using GHG emission allowances

14 What are the requirements for obtaining GHG emission allowances? How are allowances held, cancelled, surrendered and transferred? Can rights in favour of third parties (eg, a pledge) be created on allowances?

Auctioning forms the EU ETS's default method for allocating emission allowances. This means that at the beginning of the year, operators either are allocated allowances or have to buy allowances through an auction procedure to cover all their emissions for the coming year.

However, a limited number of free allowances are provided each year. Except for the power sector, carbon capture and storage installations and pipelines, the aforementioned free allowances are provided to all sectors on a transitional basis. In addition, free allocations are also made to installations in sectors assessed to be at danger of carbon leakage. In particular, from 2021 on, sectors at the highest risk of relocating their production outside of the EU will receive 100 per cent of their allocation for free. Free allocation for less exposed sectors is expected to be phased out after 2026, going from a maximum of 30 per cent to zero per cent at the end of Phase IV in 2030. Furthermore, a significant number of free allowances will be set aside for new and expanding installations.

All allowances are issued by the central administrator, who creates them in the Union Registry on the EU total quantity account. The Union Registry is thereafter in charge of holding and surrendering the allowances. The allowances might be surrendered at any time throughout the trading period.

When, at the end of the year, an operator's emissions exceed the number of allowances it possesses, or operators have emitted fewer GHGs than the number of allowances they hold, allowances can be transferred between the operator and the other market players in the EU Emissions Trading System. The allowances are then transferred between the Union Registry accounts. The transfer instructions are sent electronically by the seller's authorised representatives, who specify the number of units to be transferred as well as the details of the recipient's account. Once trades are confirmed, instructions are sent to the Union Registry for the physical transfer to occur.

Lastly, it should be mentioned that operators can also choose to cancel allowances voluntarily, which means that the allowances will be permanently removed from circulation and deleted from the Union Registry, without using them for compliance. Within the Union Registry, a specific deletion account is provided for this purpose.

TRADING OF GHG EMISSION ALLOWANCES (OR SIMILAR EMISSION INSTRUMENTS)

Emission allowances trading

15 What GHG emission trading systems or schemes are applied in your country?

Directive 2003/87/EC (the EU ETS) limits GHG emissions by setting a cap on the total amount of certain GHGs that can be emitted by installations. This cap is gradually dropped, ensuring that overall emissions are reduced.

Within the cap, operators receive or acquire emission allowances, which they can trade as needed. Each allowance gives the holder the right to emit one tonne of carbon dioxide, or the equivalent amount of other powerful GHGs, nitrous oxide and perfluorocarbons. The allocation of allowances is done by free allocation, where operators of installations obtain allowances at no cost, or through auctioning.

When, at the end of the year, an operator's emissions exceed the number of allowances it possesses, or operators have emitted fewer GHGs than the number of allowances they hold, allowances can be transferred between the different operators in the Emissions Trading System.

Trading agreements

16 Are any standard agreements on GHG emissions trading used in your country? If so, describe their main features and provisions.

There are no standard agreements on GHG emissions trading used in the EU. Internationally, however, there exist several standard forms that can be used, such as the IETA Emissions Trading Master Agreement (version 4).

SECTORAL REGULATION

Energy sector

17 Give details of (non-renewable) energy production and consumption in your country. Describe any regulations on GHG emissions. Describe any obligations on the state and private persons for minimising energy consumption and improving energy efficiency. Describe the main features of any scheme for registration of energy savings and for trade of related accounting units or credits.

The EU produces energy from a variety of sources, including solid fossil fuels, natural gas, crude oil, nuclear energy and renewable energy (such as hydro, wind and solar energy). According to publicly available figures from 2020, Renewable energy (41 per cent) is the largest contributor to energy production in the EU. Nuclear energy comes in second (31 per cent), followed by solid fuels (18 per cent), natural gas (7 per cent), and crude oil (4 per cent).

That same year, petroleum products (such as heating oil, petrol, and diesel fuel) accounted for 35 per cent of total energy consumption, followed by electricity (23 per cent) and natural and manufactured gases (22 per cent), as well as direct use of renewables (for space heating or hot water production, eg, wood, solar thermal, geothermal, or biogas) (12 per cent), derived heat (such as district heat) (5 per cent) and solid fossil fuels (3 per cent).

Regarding renewable energy, Directive 2018/2001/EU (the Renewable Energy Directive) forms the main instrument. The Renewable Energy Directive establishes a common framework for the promotion of renewable energy and a binding EU target for the overall share of renewable energy in the EU's gross final energy consumption in 2030, namely 32 per cent of the EU's final energy consumption should come from renewable energy sources by 2030.

Regarding energy efficiency, Directive 2018/2002/EU (the Energy Efficiency Directive) is of importance as it sets a target of a 32.5 per cent reduction in primary energy consumption at EU level by 2030, compared to the 2007 modelling projections of energy consumption for 2030. Additionally, the Energy Efficiency Directive requires member states to achieve cumulative end-use energy savings equivalent to new savings each year from 1 January 2021 to 31 December 2030 of 0.8 per cent of annual final energy consumption, averaged over the most recent three-year period prior to 1 January 2019. For the period 2021–2030, each member state has to develop a 10-year Integrated National Energy and Climate Plan, setting out how it plans to achieve its energy efficiency targets by 2030.

The European Commission proposed a revision of the Renewable Energy Directive and the Energy Efficiency Directive in July 2021 as part of the package to deliver on the European Green Deal.

Furthermore, various pieces of legislation require and incentivise energy savings in energy and industrial installations. Directive 2010/75/EU (the Industrial Emissions Directive), for example, requires operators

to gradually implement best available techniques (BATs) and correspondingly upgrade and modernise their installations, including energy efficiency measures.

The data sources for this question are:

- https://ec.europa.eu/eurostat/cache/infographs/energy/bloc-2b.html?lang=en; and
- https://ec.europa.eu/eurostat/cache/infographs/energy/bloc-3a.html?lang=en.

Other sectors

18 | Describe, in general terms, any regulation on GHG emissions in connection with other sectors.

Several specific pieces of legislation on GHG emissions exist. By a way of example, the F-gas Regulation aims to protect the environment by reducing emissions of fluorinated GHGs. This Regulation establishes rules on containment, use, recovery and destruction of fluorinated GHGs, imposes conditions on the placing on the market of specific products and equipment that contain the gases and imposes conditions on specific uses of the gases.

Another example is Regulation (EU) 2018/841 (the LULUCF Regulation). Under the LULUCF Regulation, member states must ensure that the accounted GHG emissions from land use, land use change and forestry are balanced by an equivalent accounted removal of CO_2 from the atmosphere for the period 2021–2030.

RENEWABLE ENERGY AND CARBON CAPTURE

Renewable energy consumption, policy and general regulation

19 | Give details of the production and consumption of renewable energy in your country. What is the policy on renewable energy? Describe any obligations on the state and private parties for renewable energy production or use. Describe the main provisions of any scheme for registration of renewable energy production and use and for trade of related accounting units or credits.

Directive 2018/2001/EU (the Renewable Energy Directive) establishes a binding EU target for the overall share of renewable energy in the EU's gross final energy consumption in 2030: 32 per cent of EU final energy consumption should come from renewable energy sources by 2030.

In July 2021, the European Commission made a proposal to amend the Directive. The proposal aims to increase the overall binding target for renewable energy from the current 32 per cent to 40 per cent, supplemented by indicative national contributions of member states to meet the collective EU target. Furthermore, the Commission proposed specific targets for renewable energy use in certain sectors (eg, transport, heating and cooling, and buildings) by 2030.

Wind energy

20 | Describe, in general terms, any regulation of wind energy.

Regarding wind energy, the Renewable Energy Directive is the main instrument.

Additionally, a new EU Strategy on Offshore Renewable Energy was published in November 2020, with a focus on offshore wind energy. According to the Strategy, the EU's offshore wind capacity should increase from 12 GW to at least 60 GW by 2030, and 300 GW by 2050.

Permitting requirements and government incentive schemes for turbines are regulated on a national level. However, the Renewable Energy Directive includes several provisions that simplify permitting processes (eg, via a single point of contact).

Solar energy

21 | Describe, in general terms, any regulation of solar energy.

Regarding solar energy, the Renewable Energy Directive is the main instrument.

Permitting requirements and government incentive schemes for solar energy plants are regulated on a national level. However, the Renewable Energy Directive includes several provisions that simplify permitting processes (eg, via a single point of contact).

Hydropower, geothermal, wave and tidal energy

22 | Describe, in general terms, any regulation of hydropower, geothermal, wave or tidal energy.

Regarding hydropower, geothermal, wave and tidal energy, the Renewable Energy Directive is the main instrument.

In addition, the European Commission has issued a communication entitled 'Blue Energy: Action needed to deliver on the potential of ocean energy in European seas and oceans by 2020 and beyond', which lays out an action plan to support the development of ocean energy, which includes wave and tidal energy. The EU has also set cost-reduction targets for ocean energy technologies for the next decade. This can be found in their Strategic Energy Technology Plan.

Permitting requirements and government incentive schemes for the production of such energy are regulated on a national level. However, the Renewable Energy Directive includes several provisions that simplify permitting processes (eg, via a single point of contact).

Waste-to-energy

23 | Describe, in general terms, any regulation of production of energy based on waste.

Regarding waste-to-energy, two directives are of particular importance: the Renewable Energy Directive and Directive 2003/87/EC (the EU ETS).

The Renewable Energy Directive states that when promoting renewable energy initiatives, member states must take into account the waste hierarchy and circular economy principles, with waste prevention and recycling as top priorities. According to the Renewable Energy Directive, no support shall be given for renewable energy production from waste incineration, unless the separate collection obligations under Directive 2009/98/EC (the Waste Framework Directive) are met. As a result, when implementing this provision, member states must assess whether the Waste Framework Directive's separate collection requirements are being complied with.

Under the EU ETS, a GHG emissions permit issued by a competent authority is required for any installation that carries out any activity listed in Annex I to the EU ETS resulting in emissions specified in relation to that activity. As a result, waste energy plants must hold a permit before carrying out any activity when it concerns combustion installations with a rated thermal input exceeding 20 MW. However, units for the incineration of hazardous or municipal waste are excluded from the EU ETS.

Biofuels and biomass

24 | Describe, in general terms, any regulation of biofuel for transport uses and any regulation of biomass for generation of heat and power.

Regarding biofuels and biomass, the Renewable Energy Directive is the main instrument.

The Renewable Energy Directive establishes binding criteria for the production of biofuels and biomass to improve sustainability and to be effective at reducing GHG emissions (so-called sustainability criteria).

Energy from biofuels and biomass will only be taken into account for the EU target and the renewable energy shares of member states as well as for assessing compliance with renewable energy obligations if these sustainability criteria are met.

Furthermore, non-binding criteria for biomass have been in place since 2010. The European Commission issued non-binding recommendations in this regard. A Commission implementing regulation (establishing operational guidance on the evidence for demonstrating compliance with the sustainability criteria for forest biomass) is yet to be adopted.

Permitting requirements and government incentive schemes for the production of energy from biofuels and biomass are regulated on a national level. However, the Renewable Energy Directive includes several provisions that simplify permitting processes (eg, via a single point of contact).

Carbon capture and storage

25 | Describe, in general terms, any policy on and regulation of carbon capture and storage.

Directive 2009/31/EC (the CCS Directive) establishes a framework for the environmentally safe geological storage of carbon dioxide to contribute to the fight against climate change. According to the CCS Directive, the purpose of environmentally safe geological storage of CO_2 is permanent containment of CO_2 in such a way as to prevent and, where this is not possible, eliminate as far as possible negative effects and any risk to the environment and human health.

According to the CCS Directive, member states that intend to allow geological storage of CO_2 in their territory must undertake an assessment of the storage capacity available on their territory. Only if there is no significant risk of leakage or damage to human health or the environment can a geological formation be selected as a storage site. In addition, member states must ensure that no storage site is operated without a storage permit.

Furthermore, the operation of the site must be closely monitored, with corrective measures implemented if leakage occurs. The CSS Directive also addresses closure and post-closure obligations and establishes criteria for transferring responsibility from the operator to the member state.

Finally, the operator must secure financial security before starting the CO_2 injection.

In its proposal for a 2030 climate and energy policy framework, the European Commission acknowledges the role of CCS in reaching the EU's long-term emissions reduction target. However, to achieve this target, a supportive EU framework will be essential and will need to be developed.

CLIMATE MATTERS IN TRANSACTIONS

Climate matters in M&A transactions

26 | What are the main climate matters and regulations to consider in M&A transactions and other transactions?

The main climate matters to be considered in M&A transactions are to be assessed on a case-by-case basis, and in light of domestic climate-related legislation. These range from verifying permits for activities that may have a climate-related impact and an evaluation of compliance with directly applicable EU regulations (eg, Directive 2003/87/EC (the EU ETS)), to an assessment of sustainability risks to which the target company is exposed.

Increased investor focus with regard to sustainability may necessitate increased scrutiny in relation to sustainability efforts of the target company (even if not mandatory on the basis of legislation), and ESG-focused due diligence is gaining importance.

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UPDATE AND TRENDS

Emerging trends

27 | Are there any emerging trends or hot topics that may affect climate regulation in your country in the foreseeable future?

On 30 June 2021, Regulation (EU) 2021/1119 (the European Climate Law) was adopted. It enshrines the EU's objective of becoming climate-neutral by 2050 in law.

The European Climate Law sets a binding target for reducing net GHG emissions (minus removals) by at least 55 per cent below 1990 levels by 2030 and provides that the interim climate target for 2040 will be set in the coming years. Additionally, the EU will aim to increase carbon net sinks by 2030.

On 14 July 2021, the European Commission adopted the 'Fit for 55' package consisting of a number of legislative proposals to make the EU's climate, energy, land use, transport and taxation policies fit for reaching the binding target of the European Climate Law.

This will, without a doubt, affect the EU's climate regulation in the foreseeable future.

* *The authors would like to thank Laura Neven for her contribution to the chapter.*

France

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MAIN CLIMATE REGULATIONS, POLICIES AND AUTHORITIES

International agreements

1 | Do any international agreements or regulations on climate matters apply in your country?

The entire United Nations Framework Convention on Climate Change, its Paris Agreement, the Kyoto Protocol and the European Union's climate change regulations apply in France through its membership of the EU. The EU officially ratified the Paris Agreement on 5 October 2016, allowing it to enter into force on 4 November 2016. Since then, the adoption of the green new deal and especially the new targets for 2030 of 55% reduction of greenhouse gases (GHGs) (European climate law of 21 April 2021) have considerably strengthened the French obligations, given that France must declare its nationally determined contributions to the European Commission every year to verify the reduction targets but also energy efficiency and renewable energy. A new one was voted on on 22 August 2021 on fighting climate change and strengthening resilience to its effects. At the national level and in addition to the various major laws and regulations, the French policy to achieve the objectives set at international level is also implemented in France through the national low carbon strategy, a document adopted by the government detailing the measures taken to reduce GHG emissions in the country. The international policy objectives are also implemented in France through another major document, called the national strategy for adaptation to climate change.

International regulations and national regulatory policies

2 | How are the regulatory policies of your country affected by international regulations on climate matters?

French regulatory policies are directly affected by international climate regulations, as the highest national administrative court (the Conseil d'Etat) has formally ruled that regulatory policies must be compatible with the GHG emission reduction targets set at the European level for 2030, failing which they will be declared illegal (CE, 1 July 2021, No. 427301, Grande-Synthe). Currently, a new complaint is pending before the Council of State insofar as the government has not complied with the request of the Council of State's judgment of 1 July 2021.

Main national regulatory policies

3 | Outline recent government policy on climate matters.

The latest and most notable French law on climate issues is Law No. 2021-1104 of 22 August 2021 on fighting climate change and strengthening resilience to its effects. The law is composed of 305 articles divided into eight titles and covers all statutes.

Recalling the Commission's commitment to achieve the greenhouse gas emission reduction targets, as they will result in particular from the next revision of Regulation (EU) 2018/842 of the European Parliament and of the Council of 30 May 2018 on binding annual reductions of greenhouse gas emissions by member states from 2021 to 2030 contributing to climate action, in order to comply with the commitments made under the Paris Agreement in article 1 of this law, the legislator wished to display from the outset its ambition to prepare the French law for the next revision of Regulation (EU) 2018/842 and its intention to organise, by 2030, a reduction in net greenhouse gas emissions of at least 55 per cent compared to 1990 in all sectors of the economy and throughout the European Union. A series of decrees implementing this law have been issued but, according to the Council of State, they do not make it possible to achieve the 40 per cent objective initially set, let alone the 55 per cent objective.

Main national legislation

4 | Identify the main national laws and regulations on climate matters.

The main national climate laws and regulations in France are:

- Law No. 2015-992 of 17 August 2015 on the energy transition for green growth, aimed at enabling France to contribute more effectively to the fight against climate change and to strengthen its energy independence, while guaranteeing access to energy at competitive costs;
- Act No. 2019-1147 of 8 November 2019 on energy and climate, setting the goal of carbon neutrality by 2050; and
- Law No. 2021-1104 of 22 August 2021 on combating climate change and strengthening resilience to its effects, adopted to prepare French law for the upcoming revision of Regulation (EU) 2018/842.

National regulatory authorities

5 | Identify the national regulatory authorities responsible for climate regulation and its implementation and administration. Outline their areas of competence.

In France, the main national regulatory authority responsible for climate regulation, implementation and administration is the Ministry of Energy Transition. The Minister of Ecological Transition prepares and implements the overall policy on combating climate change and adapting to its effects. In consultation with the Minister of Europe and Foreign Affairs, the Minister of Ecological Transition is in charge of international relations on climate, leads negotiations, including European ones, and supervises the implementation of agreements reached. The new French government also has a general delegate to the Prime Minister in charge of ecological planning and covering the climate, energy, biodiversity, transport and agriculture sectors.

GENERAL NATIONAL CLIMATE MATTERS

National emissions and limits

6 | What are the main sources of emissions of greenhouse gases (GHG) (or other regulated emissions) in your country and the quantities of emissions from those sources? Describe any limitation or reduction obligations. Do they apply to private parties in your country?

Energy consumption is the main source of GHG emissions in France (70 per cent of the total), followed by agriculture (16.7 per cent), industry (9.5 per cent) and waste (3.5 per cent). Energy consumption is mainly linked to transport (30 per cent), construction (17 per cent) and industry (10 per cent). Under the National Low Carbon Strategy, different reduction targets are set for each sector. The reduction targets can also apply to private parties, as each project subject to an environmental impact assessment must avoid, reduce or offset any GHGs associated with its project through specific measures.

National GHG emission projects

7 | Describe any major GHG emission reduction projects implemented or to be implemented in your country. Describe any similar projects in other countries involving the participation of government authorities or private parties from your country.

In France, the 'low carbon label' was created three years ago and aims to contribute to the achievement of France's climate objectives. It aims to encourage the emergence of voluntary projects to reduce GHG emissions and to support carbon sequestration in soils and biomass that go beyond regulations and standard practices.

Around the world, the French Development Agency (AFD) is setting up specific programs to help developing countries to fight against climate change. In Mexico, for example, AFD is currently conducting a 10-year, US$100 million financing programme for Mexican agriculture to develop more sustainable practices, as agriculture is responsible for 16 per cent of the country's GHG emissions.

DOMESTIC CLIMATE SECTOR

Domestic climate sector

8 | Describe the main commercial aspects of the climate sector in your country, including any related government policies.

Law No. 2021-1104 of 22 August 2021 on combating climate change and strengthening resilience to its effects adopted several measures to combat climate change in the commercial sector: an 'environmental label' was created to inform consumers about the impact, particularly on the climate, of products and services; advertising for fossil fuels will be banned in 2022; and advertising for the most polluting cars will be banned in 2028. In addition, the inclusion of climate impact in advertising is also becoming mandatory: the first environmental displays in 2022 will concern advertisements for cars and household appliances.

GENERAL GHG EMISSIONS REGULATION

Regulation of emissions

9 | Do any obligations for GHG emission limitation, reduction or removal apply to your country and private parties in your country? If so, describe the main obligations.

According to article L.100-4 of the Energy Code, France must meet the objectives of reducing greenhouse gas emissions by 40 per cent between 1990 and 2030, and achieving carbon neutrality by 2050 by reducing GHG emissions by a factor of greater than six between 1990 and 2050. Code provisions have not yet been amended to incorporate the 55 per cent by 2030 goal, but will need to be.

GHG emission permits or approvals

10 | Are there any requirements for obtaining GHG emission permits or approvals? If so, describe the main requirements.

For any new project that needs an environmental impact study, climate effects must be studied at the same time as the impact study. In addition, offsets may be required.

Oversight of GHG emissions

11 | How are GHG emissions monitored, reported and verified?

Currently, only emissions issues in the context of the EU Emission Trade System are monitored, reported and verified. However, if there are non-mandatory offsets, monitoring and verification systems have been put in place in the framework of the low carbon label and international labels.

If a permit under the legislation on classified installations includes GHG obligations, the local state representative can take any measure to control the greenhouse gas emissions associated with a plant and adopt sanctions in the event of a violation of the regulations.

GHG EMISSION ALLOWANCES (OR SIMILAR EMISSION INSTRUMENTS)

Regime

12 | Is there a GHG emission allowance regime (or similar regime) in your country? How does it operate?

A greenhouse gas emission allowance trading scheme was established at the European Union level by Directive 2003/87/EC. The provisions of the directive have been transposed into French law and codified in the Environmental Code. The installations covered by the trading system (electricity, refineries, steel, cement, glass and paper, nuclear installations, aviation activities) are subject to a greenhouse gas emission permit. Each year, the state allocates emission allowances to the operator. At the end of each calendar year, the operator must surrender, under penalty of punishment, 'a number of allowances equal to the total greenhouse gas emissions of its installations' (article L.229-7 of the Environmental Code). If the operator's emissions are higher, it can buy additional allowances on the market. It should be noted that in June 2021, the European Parliament approved a revision of the system that now includes new sectors such as maritime transport.

Registration

13 | Are there any GHG emission allowance registries in your country? How are they administered?

The surrender of allowances at the end of the year is carried out by transferring units from the operator's account to the European registry account for the conservation and transfer of units usable in the allowance system. The European registry is managed at the national level by the *Caisse des dépôts et consignations*.

Obtaining, possessing and using GHG emission allowances

14 What are the requirements for obtaining GHG emission allowances? How are allowances held, cancelled, surrendered and transferred? Can rights in favour of third parties (eg, a pledge) be created on allowances?

Allowances are issued free of charge and at the request of the administrative authority to operators authorised to emit GHGs. To benefit from this free issue, the eligible operator must declare the activity levels of its installation to the administrative authority (articles L 229-16 and R 229-7 et seq of the Environmental Code). In addition, the operator must have requested the issuance of allowances free of charge by 30 May 2019 for the 2021–2025 period and by 30 May 2024 for the 2026–2030 period. The new European legislation that is being put in place has provided for the abolition of free allowances between 2027 and 2032. This last rule for the period 2024–2030 may therefore be modified.

The operator must then submit the greenhouse gas emissions report for the previous year to the administration. The operator must return, no later than 30 April of each year, a quantity of units corresponding to the emissions resulting from the installation's activities during the previous calendar year on the basis of the declaration, which must be verified at the operator's expense by an accredited body and then validated by the administrative authority (articles L229-7 and L229-10 of the Environmental Code). Shares transferred to the European register account are cancelled (article L229-11-3 of the Environmental Code). If the operator does not surrender enough allowances, the fine is set at €100 per allowance not surrendered.

Greenhouse gas emission allowances are movable assets that can be traded and transferred by account-to-account transfer.

TRADING OF GHG EMISSION ALLOWANCES (OR SIMILAR EMISSION INSTRUMENTS)

Emission allowances trading

15 What GHG emission trading systems or schemes are applied in your country?

GHG emission allowance trading is governed by European Union law and in particular by Directive 2003/87/EC amended by Directive 1359/2013 on 17 December 2013, by Regulation 421/2014 of 16 April 2014, by Regulation 2017/2392 of 13 December 2017, by Delegated Regulation 2019/122 of 12 March 2019 and by Delegated Regulation 2019/1603 18 July 2019. Allowances are movable property that can be freely transferred by any natural or legal person, subject to certain exceptions. Allowances can be traded directly between two legal or natural entities that make contact via a financial intermediary that brings the buyer and seller together or via a trading platform.

Trading agreements

16 Are any standard agreements on GHG emissions trading used in your country? If so, describe their main features and provisions.

The GHG exchanges used in France are entirely carried out online through dematerialised applications.

SECTORAL REGULATION

Energy sector

17 Give details of (non-renewable) energy production and consumption in your country. Describe any regulations on GHG emissions. Describe any obligations on the state and private persons for minimising energy consumption and improving energy efficiency. Describe the main features of any scheme for registration of energy savings and for trade of related accounting units or credits.

In France, the production of electricity comes mainly from nuclear (69 per cent), renewable energies (22 per cent), fossil fuels (oil and gas 7 per cent) and waste (2 per cent).

Energy production fell by 8.7 per cent in 2020 compared with 2019. Primary energy consumption was distributed as follows in 2020: nuclear (40 per cent), oil (28 per cent), natural gas (16 per cent), coal (2 per cent) and renewable energy (12 per cent).

GHG emissions from energy accounted for 70 per cent of France's total emissions in 2018; they decreased by 18.2 per cent between 1990 and 2018. Law No. 2015-992 of 17 August 2015 on the energy transition for green growth set the goals of reducing greenhouse gas emissions by 40 per cent in 2030 compared to 1990, increasing the share of renewable energy to more than 30 per cent of final energy consumption in 2030 and reducing the share of nuclear energy in electricity production to 50 per cent. by 2025. This 50 per cent target has now been set for 2030 and the government has announced the relaunch of a major nuclear programme.

This law also provides that by 2025, all private residential buildings whose primary energy consumption is greater than 330 kWh of primary energy per square meter per year must undergo an energy renovation. The climate resilience law has strengthened the obligations and the new climate target of 55 per cent reduction is not yet integrated into French legislation. Among the various tools to promote the energy transition, energy saving certificates aim to encourage energy suppliers to promote savings to their customers. These suppliers have an obligation to save energy and several means are available to them: saving money on their own installations, encouraging their customers through awareness or financial aid, or buying energy certificates to sell on the market. Any individual or legal entity (associations, local authorities, companies, etc) that saves energy will be issued a certain number of certificates based on the kWh saved and will be able to resell them to these suppliers.

Other sectors

18 Describe, in general terms, any regulation on GHG emissions in connection with other sectors.

With regard to the agricultural sector, the national low-carbon strategy aims to develop 25 per cent of arable land under organic cultivation by 2030 to reduce emissions by about 4.5 Mt CO_2 eq per year. In 2019, the law declared the closure of the country's last four coal-fired power plants by 2022. France also aims to increase sales of electric vehicles to 35 per cent by 2030, so that they represent 12 per cent of the fleet on the road by that date. Law No. 2021-1104 of 22 August 2021 on combating climate change and building resilience to its effects bans domestic flights if the alternative is less than two and a half hours by train, as well as mandatory carbon offsetting for all domestic flights by 2024. With regard to waste, Law No. 2020-105 of 10 February 2020 on the fight against waste and the circular economy contains several measures aimed at avoiding the production of single-use plastics, as well as increasing the recycling rates of waste from various products. Numerous decrees have since been issued to complete the system, notably concerning all construction materials; textiles should be regulated very soon.

RENEWABLE ENERGY AND CARBON CAPTURE

Renewable energy consumption, policy and general regulation

19 Give details of the production and consumption of renewable energy in your country. What is the policy on renewable energy? Describe any obligations on the state and private parties for renewable energy production or use. Describe the main provisions of any scheme for registration of renewable energy production and use and for trade of related accounting units or credits.

To achieve its objective of reducing greenhouse gas emissions, France is pursuing a national energy policy aimed at increasing the share of renewable energy to 32 per cent of gross final energy consumption by 2030 and reducing the share of nuclear power in electricity production to 50 per cent by 2025 (article L.100-4 of the Energy Code). France is far behind on its renewable energy targets and has been criticised by the Commission for not meeting the 23 per cent target that was supposed to be reached by 2020. The recent CRE reports underline this insufficiency and efforts seem to have to be made to improve the situation.

Wind energy

20 Describe, in general terms, any regulation of wind energy.

Wind energy is regulated by environmental, urban planning, energy and public property laws. Onshore wind turbines are subject to the regime of classified installations for the protection of the environment. Thus, wind turbines whose height exceeds 50 meters are subject to the single environmental authorisation provided by the environmental code. The issuance of the environmental authorisation is equivalent to a construction permit, a compensation authorisation, an exemption for protected species, an authorisation for classified facilities, an operating authorisation under the Energy Code and an approval under article L.323-11 of the Energy Code. Unauthorised wind turbines are subject to declaration and require a building permit when the height of the mast exceeds 12 meters. The installation of offshore wind turbines is subject to the conclusion of a concession to occupy the public domain (article L.2122-1 of the General Code of Public Property).

Finally, electricity production facilities using mechanical wind energy benefit from a buy-back obligation by Electricité de France and the local distribution companies responsible for supply (article L.314-1 of the Energy Code). The multi-year energy programme defines France's energy policy (article L.141-1 et seq. of the Energy Code).

There is quite strong opposition in France to the development of wind turbines, especially from some politicians.

Solar energy

21 Describe, in general terms, any regulation of solar energy.

The regulations differ depending on the type of installation: rooftop solar, shading or ground installation. Small installations on the roof and small installations on the ground are subject to a building permit or a declaration. This is not the case for large installations. Because of the potential impact of a ground-mounted photovoltaic installation on the natural environment, its implementation is subject to specific environmental authorisations. The project will then have to obtain, depending on the case, a clearing authorisation as provided for in article L.341-3 of the Forestry Code, or an exemption to the legislation on the protection of protected species (article L.411-2 of the Environmental Code). It may also be subject to Natura 2000 impact assessment (article L.414-4 of the Environmental Code) and to the water law regime (articles L.214-1–L.214-3 of the Environmental Code). If the project falls within the scope of the Water Law, it will be subject to the Environmental Code authorisation, which will replace the 'protected species' exemption, the Natura 2000 impact assessment and the land clearing authorisation, depending on the characteristics of the project. In addition, authorisations under the energy code must be required for the most important installations. The others are subject to a simple declaration

The operating permit provided for in the Energy Code is an increasingly exceptional formality since it only applies to installations with a power rating of more than 50MW. The others are deemed to be authorised (article L.311-6).

Hydropower, geothermal, wave and tidal energy

22 Describe, in general terms, any regulation of hydropower, geothermal, wave or tidal energy.

For hydraulic works, four main administrative policies may apply: the policy on water and aquatic environments, the policy on non-domestic watercourses, the policy on inland waters (fresh and marine) and the policy on urban planning. Hydraulic works must necessarily obtain a concession or an authorisation from the Commission (article L.511-1 of the Energy Code). Companies whose power exceeds 4,500 kW are subject to the concession regime, the rest to the authorisation regime (article L.511-5 of the Energy Code).

Waste-to-energy

23 Describe, in general terms, any regulation of production of energy based on waste.

Solid recovered fuel (SRF) co-incineration plants that produce energy are subject to the authorisation regime provided by the regulations on installations classified for environmental protection. SRFs must comply with a set of specifications defined by an Order of 23 May 2016 (NOR: DEVP1525038A, JO, 25 May 2016). They must be prepared from non-hazardous waste and not exceed thresholds for mercury, chlorine, bromine, etc. In addition, these facilities are not subject to the general tax on polluting activities.

Biofuels and biomass

24 Describe, in general terms, any regulation of biofuel for transport uses and any regulation of biomass for generation of heat and power.

French legislation encourages the incorporation of biofuels into petroleum fuels intended for automobile traffic to combat atmospheric pollution (article L.224-3 of the Environment Code). The multi-year energy program sets a target for the integration of biofuels into final energy consumption in the transport sector (article L.661-1-1 of the Energy Code). For gasoline, the rates are 1.2 per cent in 2023 and 3.8 per cent in 2028, and for diesel, 0.4 per cent in 2023 and 2.8 per cent in 2028 (Decree No. 2020-456, 21 April 2020).

In France, the wood-energy sector is predominant, with 42 per cent of primary renewable energy production. The Commission is implementing a national biomass mobilisation strategy that aims to guarantee the supply of biomass energy production facilities. To support the sector, tenders for the creation of electricity production plants, a preferential electricity buy-back rate and a heat fund to develop district heating infrastructures using biomass, solar and geothermal energy have been set up.

Carbon capture and storage

25 Describe, in general terms, any policy on and regulation of carbon capture and storage.

At the European Union level, the geological storage of carbon dioxide is governed by the CCS Directive 2009/31/EC of 23 April 2009. This directive

was transposed in 2010 by the Grenelle II law of 12 July 2010 and by the decree of 21 October 2010, which provides a legal framework for safe and permanent geological storage of CO_2.

Since a decree of 20 March 2012, CO_2 capture facilities from classified facilities for the purpose of geological storage and geological storage facilities for carbon subject dioxide are not subject to authorisation under the legislation on facilities classified for environmental protection.

In addition, the 4 for 1000 initiative, launched by France at COP21 in 2015, brings together voluntary public and private storage actors to launch concrete actions on soil carbon and practices to achieve it. The ambition of 4 for 1000 is to engage farmers around the world towards productive and resilient agriculture based on appropriate land and soil management. The topic is gaining momentum today with the search for carbon sinks and the implementation of a regulation or even a regulation of the carbon market outside the ETS at the EU level.

CLIMATE MATTERS IN TRANSACTIONS

Climate matters in M&A transactions

26 What are the main climate matters and regulations to consider in M&A transactions and other transactions?

In M&A and other transactions, the key climate issues and regulations to be considered are the risks of GHG emissions liability in the event that the previously conducted activity is responsible for large amounts of GHG emissions or violates climate change laws and regulations. Care should also be taken to ensure that the activity can be compatible with new laws and regulations in this area. The issue of assets that may be lost due to their exposure to climate risks must also be addressed.

UPDATE AND TRENDS

Emerging trends

27 Are there any emerging trends or hot topics that may affect climate regulation in your country in the foreseeable future?

In France, the hot topic is the upcoming revision of Regulation (EU) 2018/842 to organise, by 2030, a reduction of net greenhouse gas emissions of at least 55 per cent compared with 1990 in all sectors of the economy and throughout the European Union. The French government is obliged to modify its objectives to meet its obligations and may well be forced to do so by the Council of State.

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Germany

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MAIN CLIMATE REGULATIONS, POLICIES AND AUTHORITIES

International agreements

1 Do any international agreements or regulations on climate matters apply in your country?

Paris Agreement

Germany is party to many international treaties on climate matters. An important treaty is the Paris Agreement, which is part of the UN Framework Convention on Climate Change (UNFCCC) and succeeds the Kyoto Protocol. The Paris Agreement entered into force in November 2016 and 55 countries (responsible for at least 55 per cent of the world-wide emissions) ratified it, making it legally binding. Almost all states worldwide have now ratified the Agreement (the United States, Iran and Turkey are a few exceptions). The parties to the Agreement undertake to limit the temperature increase to well below 2 °C above pre-industrial levels and pursue the more ambitious limit of a 1.5 °C increase. To achieve this, almost all states set up Intended Nationally Determined Contributions (INDCs) in 2015. As of 2018, every five years, the plans are reviewed to ascertain whether the states have met their objectives and to determine new contributions, which have to be more aspirational every time (ambitious mechanism). The parties set a new deadline for 2020 to update their INDCs.

German Climate Plan 2050 and Climate Protection Act

Only 10 days after the Paris Agreement entered into force in 2016, Germany adopted a climate change long-term strategy with Climate Plan 2050. The plan provides for greenhouse gas (GHG) neutrality by 2050 in line with the Paris Agreement and lays down an overall GHG reduction target in 2030 of 55 per cent compared to 1990 and individual targets for the energy, construction, transport, trade and industry, agriculture and forestry sectors.

The Climate Protection Act of autumn 2019 detailed the Climate Plan 2050 and provided for a bundle of measures aimed at more steeply reducing GHG emissions. In particular, it introduced a national emissions trading system (nETS) for fuels used in transport and heating in buildings from 2021. Further changes were adopted following a landmark decision of the German Constitutional Court in 2021. GHG neutrality as of 2045 is now enshrined in the Act and the overall 2030 climate target has been reduced to 65 per cent below the emissions in 1990. As of 2050 negative emissions are pursued.

An additional €8 billion for coal-free industrial activities, green hydrogen and green steel, as well as energy-focused building refurbishments and climate-friendly traffic has been made available through the 2022 German Immediate Action Programme.

Montreal Protocol

On the basis of the Montreal Protocol, the EU adopted the F-gas Regulation to reduce emissions of fluorinated GHGs, which have a global warming effect up to 23,000 times greater than CO_2. The F-gas Regulation is directly applicable in all EU member states. It limits the placing on the market of hydrofluorocarbons and products and imposes conditions on the use of products and equipment that contain F-gases. By 2030, it aims to cut the EU's F-gas emissions by two-thirds compared with 2014 levels, which would slow down global warming considerably. There is no international ban on F-gases and the partly halogenated H-CFCs substituting CFCs (with an ozone-depleting potential and being GHG) will be only phased out by 2040.

International regulations and national regulatory policies

2 How are the regulatory policies of your country affected by international regulations on climate matters?

Climate Plan 2050

Only 10 days after the Paris Agreement entered into force in 2016, Germany adopted a climate change long-term strategy with Climate Plan 2050. The plan provides for greenhouse gas (GHG) neutrality by 2050 in line with the Paris Agreement and lays down an overall GHG reduction target in 2030 of 55 per cent compared to 1990, with individual targets for the energy, construction, transport, trade and industry, agriculture and forestry sectors.

European goals

With the Fit for 55 Package (part one in July, and part two in December 2021) the EU adopted a suite of legislative initiatives in various sectors (including (renewable) energy, transport and construction) for the green transition. It is intended to fundamentally overhaul the EU's climate and energy policy framework and put the EU on track to deliver on its 2030 climate target of a 55 per cent reduction in GHG emissions and climate neutrality by 2050.

German goals and reality

Although Germany implemented the goals of the EU Fit for 55 Package and in some respects exceeds them, these ambitions have encountered a complex and burdensome reality. In 2021, Germany missed the EU and national goals to reduce GHG emissions by 40 per cent (actual: 38.7 per cent). In fact, that is an increase of 4.5 per cent in emissions (and 33 million tons of CO_2) compared with 2020.

This is said to be the result of greater electricity demand (an increase of 27 million tons of CO_2 compared with 2020) and a decrease in electricity generated by renewable energy sources. Also, electricity from coal-fired power plants rose in 2021 due to increased gas prices. Emissions by car traffic and domestic heating exceeded the thresholds of the Climate Protection Act, while industry and agriculture emissions fell below the values of 2021. For 2022 and 2023, it is broadly expected that emissions will rise further, as industry may have to substitute more climate-damaging energy sources for Russian gas.

Main national regulatory policies

3 | Outline recent government policy on climate matters.

The German government policy on climate matters is driven by two factors: the phase-out of nuclear and coal-fired power plants on one hand and the speedy development of more energy generated from renewable energy sources.

Phase-out of nuclear power plants

After the Fukushima nuclear accident in 2011, Germany decided to phase out nuclear energy. Since then, 14 out of 17 nuclear plants have been decommissioned and the last ones were due to be phased out in 2022. This phase-out is currently questioned because of the expected shortage of Russian gas on which large parts of German industry as well as private households are dependent. Therefore, stress tests are currently being conducted in the remaining three nuclear power plants as a basis to decide on extended operations. The main argument of the opponents of such plans is that nuclear energy is only used for the generation of electricity and not for heating, which is produced by gas and may, therefore, run short.

Phase-out of coal-fired power plants

Germany decided in 2020 on a step-by-step phase-out of coal-fired power plants by 2038. However, due to the war in Ukraine and the expected gas shortage Germany suspended the fossil-fuel phase-out in July 2022 to be able to continue operations for heat generation if required. The goal to end energy production from coal and lignite power plants by 2038 remains untouched. The suspending law expires in March 2024.

Acceleration of renewable energy projects

In parallel, the government adopted an Easter and Summer Package to accelerate renewable energy projects, for example by endowing such projects with a legal status that can override the objections of opponents. The government also reduced the required distance to other plants, residential areas or protected nature and obliged the states to dedicate circa 2 per cent of their territory to wind farms.

Main national legislation

4 | Identify the main national laws and regulations on climate matters.

Climate Protection Act

The Climate Protection Act of autumn 2019 detailed the Climate Plan 2050 and provided for a bundle of measures aimed at reducing GHG emissions more steeply. In particular, it introduced a national emissions trading system (nETS) for fuels used in transport and heating in buildings from 2021. Further changes were adopted following a landmark decision of the German Constitutional Court in 2021. GHG neutrality as of 2045 is now enshrined in the Act and the overall 2030 climate target has been reduced to at least 65 per cent lower emissions in comparison with 1990. As of 2050 negative emissions are pursued.

An additional €8 billion for coal-free industrial activities, green hydrogen and green steel, as well as energy-focused building refurbishments and climate-friendly traffic, has been made available through the 2022 German Immediate Action Programme.

Renewable Energy Sources Act

Another important regulation is the Renewable Energy Sources Act, aimed at the sustainable development of energy supply. The share of electricity generated from renewable energies in gross electricity consumption is to increase to 40–45 per cent by 2025, 55–60 per cent by 2035 and at least 80 per cent by 2050.

Greenhouse Gas Emissions Trading Act for EU ETS

One of Germany's key pieces of legislation regarding climate matters is the Greenhouse Gas Emissions Trading Act and pertinent regulations and guidelines. On the basis of the new regulations for the fourth trading period (2021–2030), industrial operators submitted their applications to the national emissions trading authorities by the end of July 2019. In June 2021, the national authority published its decision on the allocation of allowances for the first part of the fourth period (2021–2025).

BEHG for nETS

The Fuel Emissions Trading Act (BEHG) is the basis for the domestic ETS for fuels used for car traffic and domestic heating.

LNG Acceleration Act

To secure energy supplies to Germany until the renewable energy generation has been sufficiently developed the LNG Act was adopted in June 2022 which allows the permitting authorities to waive certain procedural requirements and, thus, speed up the establishment and expansion of LNG terminals and pertinent supply network.

National regulatory authorities

5 | Identify the national regulatory authorities responsible for climate regulation and its implementation and administration. Outline their areas of competence.

Ministries

In Germany, responsibility for climate regulation is split between the Federal Ministry for the Environment and the Federal Ministry for Economic Affairs and Energy.

Environment Agency

The Environment Agency gathers data concerning energy generation, consumption and environmental impacts. It commissions expert opinions and provides policy advice to the public sector and information to the public.

Network Agency

The Network Agency is not only competent for approval proceedings for the 380 kV networks intended to transport electricity from the windy north of Germany to the more industrialised south. It also plays an important role in the allocation of gas supplies in case of a gas shortage.

With regard to the promotion of renewable energies, the Network Agency organises tender procedures for capacities of electricity from renewable energy sources and determines the level of remuneration for electricity generated from the various renewable energy sources.

Emissions Trading Agency

The Emissions Trading Agency (DEHSt) handles all matters regarding emissions trading of industrial installations and energy producers under the European Union Emissions Trading Scheme (EU ETS), including allocation, exchange of data with the European Commission (such as the list of installations covered by the EU ETS and the number of allowances applied for) and related litigation. It further manages a compensation scheme for the extraordinary financial burdens imposed on operators by the energy turnaround. Ultimately, DEHSt is also the Designated National Authority for Clean Development Mechanism projects and the Designated Focal Point for Joint Implementation projects. Since 2021, DEHSt is also competent for the national emissions trade relating to car traffic and domestic heating.

GENERAL NATIONAL CLIMATE MATTERS

National emissions and limits

6 What are the main sources of emissions of greenhouse gases (GHG) (or other regulated emissions) in your country and the quantities of emissions from those sources? Describe any limitation or reduction obligations. Do they apply to private parties in your country?

National emissions

In 2021, Germany released in total 762 million tons of GHG into the atmosphere. Renewable energies have, according to the German Environmental Agency, avoided approx. 221 million ton of CO_2-equivalent emissions. Among GHGs, CO_2 has the biggest share, with around 95 per cent.

Combustion of fossil fuels

The main source of emissions in Germany is the combustion of fuels releasing GHG emissions (ie, energy-related emissions) (84.2 per cent), followed by industrial processes (7.5 per cent), agriculture (7.2 per cent) and waste treatment (1.1 per cent) (all figures relating to 2021). Energy-related emissions encompass generation of electricity (40 per cent), and heating and traffic (60 per cent). Emissions from certain industrial operations are capped by the national ceiling set by the European Commission under the European Union Emissions Trading Scheme (EU ETS) and progressively reduced. Heating and traffic fuels are subject to a national ETS.

Coal-fired power plants

In 2021, Germany had 106 coal-fired power plants (74 of them operative) with an installed capacity of 63.843 MW. Germany is phasing out coal-fired power plants by 2038 simultaneously with the phase-out of nuclear power plants by the end of this 2022. The percentage of coal in energy generation and CO_2 emissions is therefore higher than in France, for example, which largely relies on nuclear power. Under the Climate Protection Act, Germany also undertakes to reduce CO_2 emissions from all sectors by 80–95 per cent by 2050. The Climate Protection Act obliges the public sector, not private parties. The gap is to be filled with power generated by renewable energy sources, but progress here has been slower than planned. With the new energy supply issues in connection with the war in Ukraine, Germany has legally allowed the use of power plants available as reserve to resume system operation. However, this has encountered logistical problems and threatens Germany's compliance with its GHG reduction obligations.

F-gases

F-gases, together with solvents, accounted for 1.7 per cent of German GHG emissions in 2020. They are used in daily products such as in insulating materials, climate installations and fire extinguishers. Limits in products are regulated in the EU F-Gas Regulation and address producers and distributors.

National GHG emission projects

7 Describe any major GHG emission reduction projects implemented or to be implemented in your country. Describe any similar projects in other countries involving the participation of government authorities or private parties from your country.

nETS

In 2021, a national Emissions Trading System (nETS) started for the transport and domestic heating sectors, set out in the Fuel Emissions Trading Act. The covered fuels are petrol, diesel, heating oil, liquefied gas, natural gas and, from 2023 on, coal, among others. nETS is an upstream system (ie, the companies selling heating oil or fuels for transport participate in nETS and pass on the costs for the required emissions certificates to their customers). Mechanisms are in place to avoid double-charging under the EU ETS. The price for the certificates is fixed and rises from 2021–2025 (reaching €55 in 2025). As of 2026, certificates will be auctioned within a price corridor (€55–€65 in 2026). After 2026, these emissions will be integrated into the EU or a new German ETS.

Green hydrogen

For decarbonisation of the energy sector Germany has a national strategy for energy generated from hydrogen (June 2020) and is investing in green hydrogen (ie, energy generated by electrolysis). Renowned research institutes estimate a demand of 50–60 TWh by 2030 and stress Germany's dependence on supplies from abroad. Germany's own production of hydrogen amounts to 55–60 TWh but is mostly grey hydrogen (ie, generated from fossil fuels), and thus to be replaced.

In March 2021, Germany signed a Memorandum of Understanding with Saudi Arabia on hydrogen cooperation. Also in 2021, Germany agreed on a partnership to expand Namibia's hydrogen sector. In August 2022 Germany and Canada agreed on supplies of green hydrogen and LNG from Canada.

The Ministry for Trade and Industry further decided to spend €900 million to subsidise purchases of green hydrogen by the industry as of 2022 (H2Global). Further subsidies are in place for the establishment of a green hydrogen infrastructure and supply chains.

DOMESTIC CLIMATE SECTOR

Domestic climate sector

8 Describe the main commercial aspects of the climate sector in your country, including any related government policies.

There is a variety of further subsidies in place for the transition to a carbon-neutral economy and society.

Charging Infrastructure

According to the Masterplan Charging Infrastructure by 2030, 1 million charging stations for electrical cars are to be in place and 10 million electric cars shall be registered in Germany. A variety of subsidies is available for these aims.

Subsidies relating to transport and heating

Although the 9€ ticket for regional transport was a big success in the three months it was available in 2022, the government will not extend it. Howver, the VAT rate on train tickets was reduced from 19 per cent to 7 per cent to incentivise travel by train. Air travel charges had already been increased in 2020.

Carbon emission reductions in housing are incentivised as well as the replacement of oil-fired heating systems with more climate-friendly ones.

These subsidies are partly financed by the Climate Protection Emergency Program of €8 billion (2022), which was set up together with the amendment of the Climate Protection Act in May 2021 to achieve the increased saving targets in the coming years. This money is to be used, for example, to expand public transportation, subsidise higher energy standards for new buildings and further promote hydrogen technology.

Reduced subsidies and tax incentives for electric cars

The German government is of the opinion that electric cars have made the transition to a mass market. Consequently, the existing subsidies for hybrids end in 2023 and the subsidies for pure battery-electric vehicles is being stepwise reduced and phased out.

However, the tax exemptions for electric car owners for up to 10 years after the registration of their vehicle remain in force.

GENERAL GHG EMISSIONS REGULATION

Regulation of emissions

9 | Do any obligations for GHG emission limitation, reduction or removal apply to your country and private parties in your country? If so, describe the main obligations.

Emissions control

Under the German Emissions Control Regulations and the Technical Instruction on Air Pollution, limit values are set for certain emissions of industrial plants at defined measurement conditions. If such limits are violated several times or regularly the emissions control authority can enforce compliance and impose sanctions on the operator.

European Union Emissions Trading Scheme

Further, the duties under the European Union Emissions Trading Scheme (EU ETS) apply to certain listed industrial activities releasing GHGs. Installations performing such activities require an amount of allowances corresponding to their GHG emissions. Upon application, the Emissions Trading Agency allocates a number of cost-free allowances to the industrial activities for the relevant trading period. As the number of available cost-free allowances is progressively reduced, the operators must either invest in CO_2-reducing technologies or acquire the missing allowances.

Reduction of cap

The allowances available EU-wide are reduced every calendar year. For example, in the trading period 2021–2030 they will be reduced by 48 million allowances each year (the EU-wide cap thus decreasing from 1.8 billion certificates in 2021 to 1.3 billion certificates in 2030).

GHG emission permits or approvals

10 | Are there any requirements for obtaining GHG emission permits or approvals? If so, describe the main requirements.

Emissions control permit

The operator first needs a permit for the industrial activities under the Emissions Control Act containing overall emissions limits. With regard to GHG emissions, the operator must have a GHG emissions permit, which is, for old existing plants, the (same initial) permit under the Emissions Control Act.

GHG emissions permit

For newer installations, a separate permit under the Emissions Trading Act is required. The operator must submit, together with the permit application, a description of the activity, location, type and scope of activity and applied technologies. Also, the sources and quantities of emissions and the commissioning date must be provided. In the case of complex installations, additional (technical) documentation on the relevant parts, process steps and ancillary installations must be submitted.

Oversight of GHG emissions

11 | How are GHG emissions monitored, reported and verified?

Each year in March, operators of installations subject to the EU ETS determine their total GHG emissions of the previous year. They submit the data for verification to acknowledged bodies and the verified data to the Emissions Trading Agency, which transfers them to the EU registry. In April, the operators surrender the required allowances for their emissions of the previous year, which are shown in their account in the EU registry.

GHG EMISSION ALLOWANCES (OR SIMILAR EMISSION INSTRUMENTS)

Regime

12 | Is there a GHG emission allowance regime (or similar regime) in your country? How does it operate?

Allowance regime

The aim of the European Union Emissions Trading Scheme (EU ETS) is to cost-effectively reduce GHG emissions. In the third trading period, an overall EU cap with the allowances then allocated to single EU member states was established. This cap is reduced every year so that by 2030 a total reduction by 43 per cent compared with 2005 levels is reached. As a result, the costs for GHG emissions are expected to rise, while emissions decrease. For each ton of CO_2 that a company emits, it must surrender one emission allowance. Some operators receive a limited number of allowances cost-free. If operators emit more GHGs than covered by allowances, they have to purchase allowances from other operators, in auctions or on the spot market. This results in a trading price for CO_2 as an always scarcer commodity on the market and a general incentive to reduce emissions through technology.

Validity

Emissions allowances are allocated to activities or installations by an administrative decision, which, according to precedents of the European Court of Justice, can be corrected by the Emissions Trading Agency (DEHSt), also retroactively within a trading period. The German courts in most cases decide in favour of DEHSt, as even retroactive withdrawals of allowances serve the overarching objective of reducing GHG emissions.

Registration

13 | Are there any GHG emission allowance registries in your country? How are they administered?

Union registry

In the third trading period (2013–2020) of the EU ETS a Union registry was established. This is the central register for GHG emission allowances of all 31 countries that participate in the EU ETS. All allowances issued under the EU ETS are precisely recorded in this registry.

National registries

In addition, national registries exist, which, in Germany, are administered by DEHSt. Allowance trading can only be done on the level of national registries.

Mechanism

Each year in March, operators of installations subject to the EU ETS determine their total GHG emissions of the previous year. They submit the data for verification to acknowledged bodies and the verified data to DEHSt, which transfers them to the Union registry. In April, the operators surrender the required allowances for their emissions of the previous year, which are shown in their account in the Union registry.

Obtaining, possessing and using GHG emission allowances

14 | What are the requirements for obtaining GHG emission allowances? How are allowances held, cancelled, surrendered and transferred? Can rights in favour of third parties (eg, a pledge) be created on allowances?

Allocation

Emissions allowances are allocated to existing installations upon application by DEHSt for the following trading period according to applicable regulations. The application deadline for the fourth trading period was the end of June 2019. For new installations, an application must be submitted

before they become operational. The operator must provide relevant descriptions and verified data regarding the relevant installation, processes and technologies, raw and other materials releasing GHGs, emissions, their sources and planned measures for monitoring and reporting. In its allocation decision, DEHSt delimits the activities performed and emissions of the installation, and sets out the monitoring plan, conditions for reporting and the obligation to surrender a number of allowances corresponding to the emissions generated in the previous year, and states, where applicable, further duties or conditions.

Administering allowances

Emissions allowances are held in the operator's account at the national registry. They are transferable by a purchase of rights contract, but the transfer must also be entered in the national registry. Without the latter, the transfer is not effective. An entry in the German registry is presumed to be correct (like the land registry). Allowances are now also fully transferable to the next trading period. Surrender of allowances occurs via reporting to the Emissions Trading Agency and leads to their expiry. Pledges can be created on allowances but must also be entered into the German registry.

TRADING OF GHG EMISSION ALLOWANCES (OR SIMILAR EMISSION INSTRUMENTS)

Emission allowances trading

15 | What GHG emission trading systems or schemes are applied in your country?

There is no regulatory scheme for emissions trading; the trade occurs based on contracts regulating numbers, price, duration and further stipulations.

Trading agreements

16 | Are any standard agreements on GHG emissions trading used in your country? If so, describe their main features and provisions.

There are more and more contract models for trading emissions allowances – either specific contracts for emissions trading or general contracts with appendices tailored to emissions allowances. Examples are the English Agreement for the Sale and Purchase of Allowances on the one hand and the ISDA Agreement with the ISDA Allowances Appendix (similarly the EFET Allowances Appendix) or the Emissions Trading Master or the Emission Allowances Single Trade Agreement for the EU Scheme of the 20-year old IETA on the other hand. In Germany, a Master Agreement for Financial Derivative Transactions is available combined with an Annex for Commodities Transactions (including emissions allowances) used between banks and with additional clauses for non-bank purchasers. Single transactions can be agreed orally but are usually confirmed in writing. The master agreement can only be terminated for cause, which extends to the individual transactions (single agreement concept).

SECTORAL REGULATION

Energy sector

17 | Give details of (non-renewable) energy production and consumption in your country. Describe any regulations on GHG emissions. Describe any obligations on the state and private persons for minimising energy consumption and improving energy efficiency. Describe the main features of any scheme for registration of energy savings and for trade of related accounting units or credits.

Energy production

Conventional energy production in Germany was in the past primarily based on lignite, followed by coal, nuclear and natural gas. Energy generated from these sources was also exported. However, energy production is currently undergoing substantial changes: coal mining ended in 2018 and coal-fired power plants are to be shut down by 2038 by law. Also, nuclear energy is to be phased out by the end of 2022. Germany is still the second-largest producer after China of lignite worldwide (despite shrinking quantities). In 2021 27.1 per cent (2020: 16 per cent) of German electricity was still generated from lignite (126 million tons). This high percentage was due to a decrease in electricity generated by wind farms because of a lack of wind. In addition, the decrease of 11 per cent could not be compensated by upgrading new power plants.

Energy consumption

German primary energy consumption in 2020 was split between crude oil (32.3 per cent), natural gas (26.8 per cent), lignite (8 per cent), coal (8 per cent) and nuclear energy (6.1 per cent). Crude oil and natural gas are mainly used for heat supply and transportation, while coal serves mainly for electricity generation. Since Germany has hardly any of its own crude oil it must be imported. This applies correspondingly to natural gas, where consumption exceeds the production rate. Both natural gas and coal are were mainly imported from Russia until the war in Ukraine.

GHGs

GHGs are mainly generated by the combustion of fossil fuels. In 2021, the emissions of the energy sector increased by 12.5 per cent, in industry by approximately 5.5 per cent and in traffic by 1.2 per cent.

Regulations

GHG emissions have been reduced by around 38.7 per cent since 1990, among other things because of the decommissioning of industrial plants and the increased use of renewable energies.

Energy savings

Owing to the particularly high energy costs in Germany, operators have a vital interest in energy savings and the use of intelligent technologies. Energy savings in energy and industrial installations are further required and incentivised by various regulations (not trading schemes). For example, the EU Industrial Emissions Directive obliges operators to implement the best available techniques over time and correspondingly upgrade and modernise their installations (including energy efficiency measures). Domestic energy savings and instruments are often subsidised by the government (insulation, smart metering, smart homes) or imposed by eco-design requirements, but the bulk of energy saving is due to the expansion of electricity generated from renewable energy sources.

Other sectors

18 | Describe, in general terms, any regulation on GHG emissions in connection with other sectors.

Agriculture and forestry

In 2021, agriculture and forestry accounted for approximately 8.2 per cent of German GHG emissions either caused by animals and use of their manure or when converting or ploughing carbon-rich soils in forests or grasslands. To address the latter, the EU has adopted a regulation directly applicable in Germany to preserve grasslands and forests by prohibitions on converting or ploughing them and subsidies for extensive use of grasslands and reforestation.

GHG by exploitation of fossil fuels and industrial processes

GHGs generated when exploiting fossil fuels and minerals are subject to the EU ETS as well as the industrial activities (accounting for 7.1 per cent

of GHG emissions in 2017) listed in the Annex to the German Emissions Trading Act.

Waste-to-energy

Waste incineration accounted for 1.2 per cent of German GHG emissions in 2020. This low figure and a reduction of almost 75 per cent of GHG emissions since 1990 are a result of a successful restructuring of the waste management sector, phasing out landfilling of untreated wastes, consistent waste separation and energetic use of wastes. Waste-to-energy plants exceeding 20 MW of rated thermal input are subject to emissions trading.

Transportation

Aviation has been included in the EU ETS despite the fierce resistance of the United States and China; the shipping sector is likely to follow despite being even more complex. Railways are considered the greenest means of transport; hence there is no discussion of GHG in this sector. Sixty-one per cent of the traction current used by Deutsche Bahn is supplied by renewable energy sources. Car traffic is still a major contributor of GHGs in transportation. However, reductions are not addressed in a single regulation but by a variety of measures, among them the national emissions trading system.

RENEWABLE ENERGY AND CARBON CAPTURE

Renewable energy consumption, policy and general regulation

19 | Give details of the production and consumption of renewable energy in your country. What is the policy on renewable energy? Describe any obligations on the state and private parties for renewable energy production or use. Describe the main provisions of any scheme for registration of renewable energy production and use and for trade of related accounting units or credits.

Figures

In connection with the 'energy turnaround' in 2011 as a reaction to the Fukushima nuclear disaster, Germany vigorously promoted and expanded energy generation from renewable energy sources. In 2021, a total of 467 TWh were generated from renewable sources. The share of electricity generated from renewable energy sources increased to 41 per cent in 2021 (2011: 20.1 per cent). In the heating sector, renewable energy rose to 16.5 per cent in 2021 and in the transport sector to 6.8 per cent. In total, the share of renewable energies in the final energy consumption across all sectors amounted to 19.7 per cent in 2021 (2011: 12.2 per cent).

Policy

The Renewable Energy Sources Act of 2000 has been a successful instrument in fostering the increase of energy generated from renewable sources. Its numerous revisions illustrate the continued efforts and progress of politics to boost renewable energies. The Act was again revised in 2021 and 2022 and now contains more ambitious goals for the expansion of renewable energies. By 2030 the projected share of renewables in energy generation is 65 per cent. For wind energy, the installed capacity to be reached by 2030 is 71 GW (2019: 54 GW). For solar energy, an annual increase of 4.6–5.6 GW is planned, with a total installed quantity of 100 GW in 2030 (2021: 52 GW). Regarding the quantity of electricity generated by 2040, the Act projects 160 GW from wind farms and 400 GW from solar plants.

The mechanism of the law is that energy from renewable energy plants is fed into the public electricity grid and the operators receive a fixed remuneration from the transmission system operators for 20 years. The operators sell the injected electricity on the electricity exchange. Because the price received on the exchange is below the determined remuneration rates for renewable energy plant operators, the differential is passed on to each electricity consumer. In 2021, the average apportionment was reduced to 3.7 ct/kWh, the rest of the difference being paid from the Federal budget. Above certain feed-in quantities, remuneration for electricity from wind and solar energy is subject to an auctioning process. Where competitive markets are established the regulator withdraws from further subsidising the plant operators.

Direct marketing

Alternatively, renewable energy installation operators can also market their power directly. In that case, the difference between the price obtained at the exchange and the feed-in remuneration is compensated by a market bonus (market bonus scheme). The distribution system operator pays the market bonus to the plant operator.

Wind energy

20 | Describe, in general terms, any regulation of wind energy.

Figures on-shore and off-shore

In 2021, wind energy made the largest contribution to electricity generation from renewable energy sources (113.8 TWh), compared to 46.5 TWh in 2011. However, in comparison to 2020, energy generated from wind turbines decreased by 14 per cent. In the first quarter of 2022, only 99 wind energy plants (407 MW) were put into operation, which is 23 per cent fewer than last year. Also, some of the older wind power plants had to be shut down. Germany ranks third worldwide regarding installed onshore capacity, behind China and the United States.

In 2021, almost 1,501 offshore wind turbines were installed off the German coast in 27 offshore wind farms with a combined capacity of approximately 7,800 MW. By 2026, a total of 12,000 MW is to be generated.

Permit

The approval procedure for wind parks depends on the quantity of the planned installations. Those with fewer than 20 plants can be permitted in a simplified procedure under the Emissions Control Act without public participation. In that case, only a simple environmental impact assessment must be performed. In the case of public participation, typical objections against wind parks are nature protection issues. Often the collision risk of protected birds (such as the red kite) is an issue, as well as wind parks establishing an obstacle to the flight routes of many birds.

According to the Renewable Energy or Summer Package of July 2022, 2 per cent of the total territory of each German state must from now onwards be dedicated to wind farms.

Current slowdown

The number of wind energy plants newly put into operation has decreased dramatically. Reasons for this decline may be the long permit procedures (approximately one year) and increasing resistance to new projects. The Regulator has adopted several legal amendments and issued policies to reduce the points of attack of project opponents.

Solar energy

21 | Describe, in general terms, any regulation of solar energy.

Figures

In 2021, electricity generated from photovoltaic (PV) installations reached only 50 TWh (ie, a 1 per cent increase compared with 2020). However, the total number of new PV installations has been steadily increasing for many years. New installed capacities amounted to 5,007 MW in 2021. The total installed capacity of 58,700 MW (2020) is an increase of 44 per cent compared to 2016.

Permit

PV installations on a roof or the front of a house do not require a permit. Open area PV installations, however, require building permits under the Construction Codes of the German states. In the state of Hessen, for example, a permit is required for PV plants exceeding 10 m^2.

Subsidies

Both small and large solar systems are subsidised by various federal and state programs. Electricity generated from PV installations is remunerated under the Renewable Energy Sources Act and depends on the award values from two years ago (currently it is 8.91 ct/kWh).

Hydropower, geothermal, wave and tidal energy

22 | Describe, in general terms, any regulation of hydropower, geothermal, wave or tidal energy.

Hydropower

In Germany, hydropower is less important than, for example, in Austria or Switzerland. Owing to a long period of drought in 2019, in 2021 electricity generation from hydropower was 19.1 TWh, at a similarly low level as in recent years. The share of hydropower in total electricity consumption is 3.2 per cent.

Permit

Approvals for hydroelectric power generation are governed by the water laws and regularly limited in time. Environmental issues have become the biggest restrictions on the use of hydropower.

Geothermal energy

With a total of 0.2 TWh, geothermal energy increased by 17 per cent in 2021 for heating purposes and for generation of electricity from hot waters. The share of geothermal, however, remains marginal in the final electricity consumption in Germany. Owing to damage caused by geothermal drilling in southern Germany the public is rather reluctant to accept deep drilling.

Permit and subsidies

Deep drilling for geothermal purposes and subsequent operations requires permits under the mining and water laws. Energy from geothermal plants is remunerated by 25.20 ct/kWh. Further support is provided by the market incentive program, which subsidises the replacement of old with new heating systems generating heat from renewable sources.

Tidal energy

Tidal energy plays a subordinate role in Germany due to shallow waters and weak currents in the North and Baltic Seas. Germany, however, is involved in the international research project Seaflow, together with the United Kingdom, which is geared to developing (export) technologies adapted to marine conditions. Researchers are using tidal currents off the coast of Cornwall to generate electricity.

Waste-to-energy

23 | Describe, in general terms, any regulation of production of energy based on waste.

Figures

Waste-to-energy is production of electricity from the incineration of waste, which is, in a closed cycle economy, the option preferred to landfilling or simple incineration. Often, heat and power are coupled. As a result, the energy performance of waste-to-energy plants can be over 80 per cent. One ton of waste can generate about 600 kW of electricity. Further, the waste volume is also reduced to 10 per cent (slag and fused metals, which can be reused). Waste-to-energy is currently applied in 18 plants in Germany and neighbouring countries. It generated electricity for around 700,000 households in 2017 (approximately 3.5 million MWh of process steam and district heating). Currently, waste-to-energy plants are a bottleneck for the huge waste quantities available in the market. As a result, there has been a drastic increase in price. In the EU, energy generation from waste is highest in Germany (7.1 MWh in 2018).

Permit

Waste-to-energy installations require a permit under the Emissions Control Act with prior public participation. They are, thus, typically subject to resistance from neighbours, environmental NGOs and competing industrial players. There are no specific subsidies or incentive schemes.

Biofuels and biomass

24 | Describe, in general terms, any regulation of biofuel for transport uses and any regulation of biomass for generation of heat and power.

Figures

In 2021, sales of biofuels increased by almost 24.9 per cent to a total of 38.8 TWh.

Permit

Starting materials for biofuel production, such as sugar beet, soy products or wood (renewable raw materials), must meet certain sustainability standards (ie, no soils of high biodiversity or high carbon content can be used).

Biomass figures

In 2021, around 50.4 TWh of electricity were generated from biomass. Solid biomass (mainly wood) featured as the most important share of renewable energies in the heat supply sector.

Permit

Depending on the combustion heat output and the type of fuel, combustion plants are generally subject to permitting procedures under the Federal Emissions Control Act. Depending on the type of fuel, an environmental impact assessment needs to be performed. Domestic small combustion plants less than 1 MW can be operated without a permit, but the operator must report on their duties.

Subsidies

For the generation of electricity from biomass an increased basic remuneration is guaranteed for 20 years. The remuneration depends on the rated power. If the rated power is up to 150 kWh, the remuneration amounts to 12.8 ct/kWh.

Carbon capture and storage

25 | Describe, in general terms, any policy on and regulation of carbon capture and storage.

Carbon capture and storage

Carbon capture and storage (CCS) is generally seen as a promising technology to combat climate change. CO_2 could be captured in industrial pre- or post-combustion or oxyfuel processes and stored at depths exceeding 1,000 metres below the surface. According to experts, CCS could contribute to a 14 per cent reduction of CO_2 by 2050. Nonetheless, CCS is far from reaching its full potential. Germany enacted a law on the testing and demonstration of CCS technology in 2012; however, comparable to deep geothermics or fracking, CCS encounters broad public resistance in view of the long-term storage issue. For large combustion or gas turbine plants generating electricity (greater than 300 MW) the possibility of CCS must be tested mandatorily by law.

Projects

While some CCS projects in northern Germany have been either stopped or abandoned, several producers of cement have developed pilot operations for CCS, which are partly permitted and currently under construction. The production of cement always generates a certain amount of CO_2 so that CCS is an option to achieve CO_2 neutrality.

CLIMATE MATTERS IN TRANSACTIONS

Climate matters in M&A transactions

26 | What are the main climate matters and regulations to consider in M&A transactions and other transactions?

Energy

Climate and energy-related issues play an increasing role In M&A transactions. The standard programmme should, therefore, encompass a review of energy demand and supply as well as new taxes or charges on energy production or consumption. Use and remuneration of renewable energy sources should be carefully reviewed. Also, energy-intensive industries carrying the burden of the German energy turnaround may be eligible for substantial subsidies or compensation for energy costs.

Emissions trading

The conditions of emissions trading (if applicable to an installation) in the current trading phase and its continued expansion to new sectors (after aviation, shipping and possibly other sectors of traffic) should be considered. The rising price for CO_2 emissions to up to €55 per tonne in 2055 may also trigger technical upgrades or changes in an installation. Some technologies may, in the medium or long term, have to be phased out altogether. Due diligence must further extend to ongoing litigation of the relevant target company in relation to these matters. Allowances, subsidies or issues are generally linked to the operations and company so that no transfer is required in the case of a share deal.

Climate change

The changing climate becomes relevant in transactions where, for example, low temperatures are required or water is needed for industrial operations. During droughts, water supplies may become expensive and exceptional permits may be required for extracting water from rivers or from below ground. Climate and energy issues are not only reshaping current industrial operations, but will also affect their value and future.

UPDATE AND TRENDS

Emerging trends

27 | Are there any emerging trends or hot topics that may affect climate regulation in your country in the foreseeable future?

Current status

In Germany, the issue of climate change and its consequences has struggled for attention since the war in Ukraine and linked energy supply issues are in the spotlight. With increasing CO_2 emissions in industry and the lifetime extensions of coal-fired power plants and possibly of nuclear plants the trend appears to be going in the opposite direction. A drastic expansion of energy generated by renewable energy sources is hindered by long permit procedures and fierce resistance from various pressure groups.

Climate Protection Act and incentives

Notwithstanding this situation, a legal obligation spelt out in a landmark ruling of the German Constitutional Court (29 April 2021) keeps the regulator on track with the Paris Agreement. The court held the German legislator responsible to regulate more ambitious and detailed measures to comply with the national GHG reduction obligations under the Paris Agreement. This is also to preserve the basis for future generations' civil rights and liberties.

As a result of the ruling, the Climate Protection Act has been amended and the German 2030 climate target raised to a reduction of at least 65 per cent in GHG emissions compared with 1990 (and 100 per cent in 2045). The Act also requires CO_2 reductions by 2030 for the energy, industry, traffic, construction and agricultural sectors. Further, authorities must be obliged in permit procedures to investigate, describe and evaluate the project's impacts on climate. Planning must include the target year of climate neutrality.

Further to that, German industry is incentivised to develop recycling and circular economy technologies. Ultimately, measures to boost the production and import of (grey, blue, turquoise, green) hydrogen as a source of energy have been taken.

National Emissions Trading System (nETS)

While Germany has introduced national emissions trading for car traffic and domestic heating, it remains to be seen whether these sectors will also become part of the EU ETS in the next years. In addition, the German government has decided to include waste incineration plants in its nETS – against the decision on the EU level and arguments of the industry, lobbyists and lawyers. The regulation still has to be adopted.

Cleaner traffic

A bundle of different instruments is either in place or to be adopted in the near future to reduce GHG, NOx and particulate matter emissions in car traffic. First, vehicles with high CO_2 emissions are increasingly banned from German cities after an unprecedented wave of court actions initiated by a German environmental NGO based on the exceeding of limit values of an EU air quality regulation. One reason for was the manipulated measurements of the exhaust gases by car manufacturers (the Diesel scandal). In 2021, however, after a ruling of the European Court of Justice stating an infringement of the EU Air Quality Directive, Germany ultimately complied with the NOx limits, which were exceeded in fewer than five German cities (2019: 25 cities).

All this has led to a turnaround in the production and use of cars in cities: electric cars are still heavily incentivised, the costs of public transport have been reduced and the infrastructure for public transport is being reinforced and expanded.

Faster permit procedures for important infrastructures

A brand new bill intends to introduce changes in the procedural rules for administrative courts to accelerate decisions in legal redress against important infrastructures, including high-speed rail tracks, the

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construction of high-voltage grids, renewable energy projects and new gas infrastructure.

The Easter and Summer Packages introduced legal priority of such important infrastructure projects and not only reduced distance requirements (eg, to wind farms), but also focused and reduced nature protection. Also, the German States were obliged to reserve 2 per cent of their territory to wind farms. Simultaneously, for the transitional period until the new projects are operative the government has initiated cooperation and contracts with other states on fossil and green energy supply. The new regulations appear quite effective to achieve their aims but will have to be tested for their compatibility with EU laws.

It remains to be seen whether Germany will navigate safely through these troubled times and their immense challenges to ultimately moor in the harbour of climate neutrality.

* *Elisabeth Koch and Victoria Müller-Gschlössl also contributed to this chapter.*

India

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MAIN CLIMATE REGULATIONS, POLICIES AND AUTHORITIES

International agreements

1 | Do any international agreements or regulations on climate matters apply in your country?

Yes, India is a party to the United Nations Framework Convention on Climate Change and to the agreements and policies framed thereunder including the Kyoto Protocol, the Paris Agreement and the Glasgow Climate Pact. India is also a signatory to the Montreal Protocol (and its Kigali Amendment) on phasing down hydrofluorocarbon emissions.

International regulations and national regulatory policies

2 | How are the regulatory policies of your country affected by international regulations on climate matters?

The Constitution of India empowers India's legislature (Parliament) to enact laws for the domestic implementation of international agreements, treaties and conventions to which India is a signatory. In adherence to its international commitments, India has notified various policies to combat climate change, which include those relating to electric mobility, clean energy, energy efficiency, forest conservation and clean air and water.

Main national regulatory policies

3 | Outline recent government policy on climate matters.

India has framed the following policies to combat climate change:

- The National Action Plan on Climate Change, 2008 (NAPCC) encompasses eight National Missions focussing on climate change mitigation and adaptation:
  - National Solar Mission;
  - National Mission for Enhanced Energy Efficiency;
  - National Mission on Sustainable Habitat;
  - National Water Mission;
  - National Mission for Sustaining the Himalayan Ecosystem;
  - National Mission for a Green India;
  - National Mission for Sustainable Agriculture; and
  - National Mission on Strategic Knowledge for Climate Change.

In addition to NAPCC, many state governments and union territories have also framed their respective action plans on climate change:

- The India Cooling Action Plan, 2019 has been launched with a long-term vision to reduce direct and indirect emissions from energy-intensive devices such as refrigerators and air conditioners. It intends to address the cooling requirement across various sectors and lists the actions that could help in reducing the cooling demand.
- The National Clean Air Programme, 2019 lays down an action plan to reduce air pollution at the city and regional levels in India. It aims to ensure a 20–30 per cent reduction in particulate matter concentration by 2024.
- The Green Hydrogen Policy, 2022 encourages the production and use of green hydrogen and green ammonia as crucial tools for emissions reduction, especially in the hard-to-abate sectors.
- The Faster Adoption and Manufacturing of Hybrid and Electric Vehicles scheme has been launched to encourage demand for and supply of electric vehicles in India. Many state-level policies to encourage electric vehicles have also been notified. Recently, a draft battery swapping policy was also released to avoid battery charging issues in electric vehicles.
- The union government is also promoting the use of LED bulbs to replace older energy-inefficient bulbs through schemes like UJALA (Unnat Jyoti by Affordable LEDs for All) and the Street Lighting National Programme (for use of solar-based LED lights in streets).
- The government is also connecting un-electrified rural and urban areas to the electricity grid through the Deendayal Upadhyaya Gram Jyoti Yojana (Rural Electrification Plan) and Saubhagya schemes.
- To reduce the use of biomass resources like cow dung, firewood, etc. for heating purposes, the government is providing subsidised LPG connection to rural households under Pradhan Mantri Ujjwala Yojana.
- In the union budget for the financial year 2022–23, the union government has announced various initiatives relating to chemical-free natural farming, electric vehicle battery inter-operability, additional incentive schemes for production of solar panels, circular economy, agro-forestry and private forestry, green bonds and blended finance to further address climate change.
- India used to levy clean energy cess on coal to fund clean energy projects in India. This tax, however, was later subsumed into Compensation Cess after implementation of the Goods and Service Tax. Some states in India also levy cess or tax on polluting activities within their jurisdictions.

Main national legislation

4 | Identify the main national laws and regulations on climate matters.

While there is no specific legislation meant to address climate change in India, the issues relating to climate change and its causes are addressed through various environmental legislations, some of which are mentioned below:

- The Environment (Protection) Act, 1986 is the umbrella legislation that empowers the union government to initiate steps for environmental protection and improvement. While there is no specific reference to climate change, through this legislation the government and the regulatory authorities are empowered to regulate

and prevent environmental damage, which if allowed, also contributes to climate change.

- The Water (Prevention and Control of Pollution) Act, 1974 lays down the framework for prevention and control of water pollution in India.
- The Air (Prevention and Control of Pollution) Act, 1981 lays down the framework for prevention, control and abatement of air pollution in India, thus also helping to reduce emissions and helping in climate change abatement.
- The Forest (Conservation) Act 1980 provides the framework for conservation of forests in India, thus ensuring that India's natural carbon sinks are protected and conserved.
- The Biological Diversity Act, 2002 provides the framework for conservation of biological resources, their sustainable use and the fair and equitable sharing of the benefits arising out of such use.
- The National Green Tribunal Act, 2010 has established the National Green Tribunal for the adjudication of cases involving substantial questions relating to environment and this may also include issues relating to the contributory factors for climate change, such as air pollution, depletion of forest cover and water pollution.
- The Energy Conservation Act, 2001 provides the framework for energy conservation and its use and governance in India. It seeks to conserve energy and provide a mechanism for energy efficiency to help India in meeting its net zero commitments.
- The Motor Vehicles Act, 1988 provides a framework for the transportation sector in India by covering aspects such as vehicle registration, fuel efficiency and emission standards.

National regulatory authorities

5 Identify the national regulatory authorities responsible for climate regulation and its implementation and administration. Outline their areas of competence.

The Union Council of Ministers is the highest executive decision-making body of India, headed by the Prime Minister of India. It is responsible for major policy-level decisions.

The Ministry of Environment, Forest and Climate Change is the nodal ministry for administering the regulatory framework related to environment, biodiversity, forests, wildlife and climate change.

The Ministry of Power is the nodal ministry for enforcing the regulatory framework related to the energy sector.

The Ministry of New and Renewable Energy is the nodal ministry for new forms of energy, such as solar, wind, hydrogen and biomass.

Further, there are other sectoral ministries, such as the Ministry of Road Transport and Highways, the Ministry of Agriculture, the Ministry of Housing and Urban Affairs and the Ministry of Industry, that are working to address climate change-related issues in their respective sectors.

The Apex Committee for Implementation of the Paris Agreement is an inter-ministerial body constituted for a coordinated response on climate change matters and to ensure that India is on track towards meeting its climate change obligations under the Paris Agreement.

The Central Pollution Control Board is the central regulatory authority responsible for administering and enforcing regulations relating to industrial pollution, waste management, emissions, environmental standards, etc.

NITI Aayog is a think tank set up to advise the Government on various policy issues, including aspects relating to climate change.

GENERAL NATIONAL CLIMATE MATTERS

National emissions and limits

6 What are the main sources of emissions of greenhouse gases (GHG) (or other regulated emissions) in your country and the quantities of emissions from those sources? Describe any limitation or reduction obligations. Do they apply to private parties in your country?

As per India's Biennial Report to the United Nations Framework Convention on Climate Change (2021), India's net GHG emissions were 2,531,069,000 tons of CO_2-equivalent in 2016. Of this, the energy sector contributed 75 per cent of emissions, followed by 14 per cent from agriculture, 8 per cent from industrial processes and product use and 3 per cent from waste.

In its National Determined Contribution (2015), India had committed to reduce the emissions intensity of its GDP by 33–35 per cent by 2030 from the 2005 level. In 2021, India achieved emission reduction of 28 per cent from 2005 levels. India revised these targets at the 26th Conference of Parties in Glasgow by stating that:

- India will reduce the carbon intensity of its economy by 45 per cent by 2030; and
- India will reduce its total projected carbon emissions by one billion tons from 2021 until 2030.

These are economy-wide emissions reduction targets determined by the government. While the private sector is also covered when it comes to such collective targets, there are no compulsory reduction obligations as such.

National GHG emission projects

7 Describe any major GHG emission reduction projects implemented or to be implemented in your country. Describe any similar projects in other countries involving the participation of government authorities or private parties from your country.

Many emission reduction projects have been undertaken in India under the Clean Development Mechanism (CDM) of the Kyoto Protocol. India has about 250 million Certified Emission Reduction units under CDM. India has 1,767 registered projects under CDM, placing it second in the world.

Some of the major CDM projects implemented in India are:

- a project to reduce emissions of HFC-23 (a potent GHG) generated as a by-product in production of a refrigeration gas;
- power generation project based on natural gas;
- use of super-critical technologies to reduce GHG emissions from thermal power projects; and
- hydroelectricity projects in Himalayan states of India. An Indian company has undertaken a CDM-registered hydropower project in Bhutan.

DOMESTIC CLIMATE SECTOR

Domestic climate sector

8 Describe the main commercial aspects of the climate sector in your country, including any related government policies.

The Securities and Exchange Board of India has recently mandated the top 1,000 listed entities of India to make disclosures on environment, social and governance factors which include information on non-financial aspects related to the business like GHG emissions, energy efficiency, renewable energy utilisation, resource efficiency and sustainability initiatives.

There are also policies in India allowing entities to receive and trade in energy-saving certificates and renewable energy certificates, which aim to encourage energy saving by energy-intensive industries and demand and supply of renewable energy respectively.

India substituted Clean Energy Cess (levied at the rate of 400 rupees per tonne of coal produced or imported) to fund clean energy projects in India with GST Compensation Cess. India also levies an implicit carbon tax of US$140 on petrol and US$64 on diesel. Some states, such as Delhi and Goa, also levy cess or tax on polluting activities within their jurisdictions.

GENERAL GHG EMISSIONS REGULATION

Regulation of emissions

9 | Do any obligations for GHG emission limitation, reduction or removal apply to your country and private parties in your country? If so, describe the main obligations.

In its Nationally Determined Contribution (2015), India had committed to reduce the emissions intensity of its GDP by 33–35 per cent by 2030 from the 2005 level. India updated this target at the 26th Conference of Parties (2021) in Glasgow by stating that:

- India will reduce the carbon intensity of its economy by 45 per cent by 2030; and
- India will reduce its total projected carbon emissions by one billion tonnes from 2021 until 2030.

These are economy-wide emissions reduction targets. While the private sector is covered in these targets, there are as yet no specific obligations for it.

GHG emission permits or approvals

10 | Are there any requirements for obtaining GHG emission permits or approvals? If so, describe the main requirements.

While India has a system to seek environmental consents that lay down the standards for effluents and emissions, there are no specific requirements for seeking GHG emission permits or approvals.

Oversight of GHG emissions

11 | How are GHG emissions monitored, reported and verified?

India uses the GHG emission inventory methodology developed by the United Nations Framework Convention on Climate Change.

GHG EMISSION ALLOWANCES (OR SIMILAR EMISSION INSTRUMENTS)

Regime

12 | Is there a GHG emission allowance regime (or similar regime) in your country? How does it operate?

India does not have a national GHG emission allowance system. The union government and the state of Gujarat have released proposals to initiate the process of carbon emissions allowance and trading, but these policies have not yet been finalised.

However, there are a few similar systems. Under the Perform Achieve and Trade scheme, the government allows the issue and trading of Energy Saving Certificates credited for energy conservation. Further, under the Renewable Energy Certificate (REC) trading system, the government allows the issue and trading of RECs for specified entities to meet a portion of their energy requirements from renewable energy.

Similarly, states like Punjab and Gujarat have also launched projects for air pollution allowance and trading systems targeted to reduce air pollutants from industrial activities.

Registration

13 | Are there any GHG emission allowance registries in your country? How are they administered?

No.

Obtaining, possessing and using GHG emission allowances

14 | What are the requirements for obtaining GHG emission allowances? How are allowances held, cancelled, surrendered and transferred? Can rights in favour of third parties (eg, a pledge) be created on allowances?

There is no GHG emission allowance policy in India.

TRADING OF GHG EMISSION ALLOWANCES (OR SIMILAR EMISSION INSTRUMENTS)

Emission allowances trading

15 | What GHG emission trading systems or schemes are applied in your country?

Currently, India does not have a GHG emission trading system. The union government and the government of Gujarat are, however, considering setting up such a system.

Trading agreements

16 | Are any standard agreements on GHG emissions trading used in your country? If so, describe their main features and provisions.

No.

SECTORAL REGULATION

Energy sector

17 | Give details of (non-renewable) energy production and consumption in your country. Describe any regulations on GHG emissions. Describe any obligations on the state and private persons for minimising energy consumption and improving energy efficiency. Describe the main features of any scheme for registration of energy savings and for trade of related accounting units or credits.

Around 59 per cent (236 GW) of India's total installed power generation capacity is based on fossil fuels or non-renewable sources, such as coal, gas, diesel and lignite. The power generated from these sources emits more than 50 per cent of India's fuel-related GHG emissions. Coal-based thermal power plants are responsible for 70 per cent of India's energy sector CO_2 emissions.

India has initiated various policies to reduce GHG emissions from the energy sector. Apart from encouraging renewable energy installations, India is also focussing on improving the efficiency of its existing fossil fuel-based energy capacity through the following measures:

- Deendayal Upadhyaya Gram Jyoti Yojana (Rural Electrification Plan) and UDAY, which seek to expand and modernise the electricity distribution network in India and which will reduce the demand for other polluting sources of energy such as diesel generators, coal and biomass.

- To improve the efficiency of existing thermal power plants, the government has introduced policies to renovate and modernise these plants by installing highly efficient supercritical, ultra-supercritical and advanced ultra-supercritical technology. Older and highly inefficient plants are being considered for retirement.
- The government has also introduced stringent emission standards for thermal plants to reduce their emissions. The timeline is determined based on the location of the plant.
- A policy for the effective disposal and utilisation of fly ash from thermal power plants has also been introduced to reduce the carbon footprint of these plants.
- The National Mission on use of Biomass provides for co-firing of biomass in thermal power plants to reduce the GHG emission of these plants.
- India's Draft Electricity Policy, 2021 envisages the use of efficient technologies and air-cooled condenser in thermal power plants to reduce their emissions.

In relation to the obligation for industries to reduce their energy consumption and trading of credits received for saved units, it is relevant to note the Perform Achieve and Trade scheme. Under this scheme, authorities determine intensity-based energy reduction targets for specified industries from energy-intensive sectors. Industries that achieve their targets are issued Energy Saving Certificates, which they can then trade with other industries that could not reduce their energy consumption to a specified level. This scheme is intended to drive innovations for reduction in energy consumption and for rewarding industries taking such steps.

Other sectors

18 Describe, in general terms, any regulation on GHG emissions in connection with other sectors.

India has also introduced various policies to reduce GHG emissions in sectors other than energy. Some such initiatives are mentioned below:

- Faster Adoption and Manufacturing of Hybrid and Electric Vehicles (FAME) schemes have been launched to encourage the demand and supply of electric vehicles in India. Many state-level policies to encourage electric vehicles have also been notified. A target has been set to achieve 30 per cent electric vehicles in total vehicle sales by 2030.
- To encourage electric vehicle production in India, India has introduced the Production Linked Incentive Scheme for battery-operated electric vehicles and hydrogen fuel cell vehicles of all segments and Advanced Chemistry Cell battery storage.
- Indian Railways has set for itself the target of achieving net zero emissions by 2030. In connection with this, solar panels are being installed at railway stations and railway lands, as well as on the roofs of trains.
- India is expanding the network of mass rapid transit systems and regional rapid transport systems to different cities to reduce dependence on private vehicles.
- The union government has introduced measures to encourage the scrapping of old vehicles by restricting renewal of their registration certificates beyond certain years and incentivising customers with benefits when buying new vehicles after scrapping.
- The government is also encouraging blending of petrol with ethanol to reduce GHG emissions. It seeks to achieve 20 per cent blending by the year 2025-26. Additional duty has also been proposed on unblended fuel in the union budget 2022-23.
- The Director General of Civil Aviation has issued the Climate Change Initiatives and Local Air Quality Monitoring in Civil Aviation, 2015 to promote various measures to reduce GHG emissions. Airports at Delhi, Mumbai and Kochi are increasingly relying on renewable energy for their energy requirements.
- The government has introduced regulations such as the Energy Conservation Building Code, 2017, Eco-Niwas Samhita, 2018, Design Guidelines for Energy Efficient Multi-Storey Residential Buildings, 2014 and Energy Efficiency Label for Residential Buildings, 2019 to encourage energy conservation and improvement in energy efficiency in buildings across India.
- In the agriculture sector, while there are currently no regulations to reduce GHG emissions, the government has launched the PM-KUSUM scheme to encourage the use of off-grid solar water pumps for irrigation to reduce diesel consumption.
- To reduce GHG emissions related to synthetic chemicals, the government is promoting organic farming and zero budget natural farming practices.
- The National Bank for Agriculture and Development of India has introduced policies to encourage reduction in GHG emissions from the agriculture sector by the use of renewable energy and improving energy efficiency.
- As per India's State of Forest Report (2021), India's total forest and tree cover increased by 2,261 km^2 from 2019. Its carbon stock currently stands at 7.2 billion tons and is increasing by an average of 40 million tons a year.
- In case of diversion of forest land for non-forest purposes, compensatory afforestation needs to be undertaken by the entities concerned.
- Various schemes have been launched to promote afforestation, such as the National Agro-forestry Policy, the Green India Mission, the National Green Highways Mission, Joint Forest Management, the Urban Forests Scheme and Pradhan Mantri Van Dhan Yojana.

RENEWABLE ENERGY AND CARBON CAPTURE

Renewable energy consumption, policy and general regulation

19 Give details of the production and consumption of renewable energy in your country. What is the policy on renewable energy? Describe any obligations on the state and private parties for renewable energy production or use. Describe the main provisions of any scheme for registration of renewable energy production and use and for trade of related accounting units or credits.

In its Nationally Determined Contribution (2015), India had committed to achieve 40 per cent of its installed electricity capacity from non-fossil energy sources by 2030. This target was achieved in November 2021, when renewable sources crossed 40 per cent of India's total installed capacity. India currently has 41.4 per cent (166 GW) of its installed generation capacity based on renewable energy sources. Globally, India is fourth in terms of the total installed capacity of renewable energy, fifth in solar energy and fourth in wind energy. The government has set itself the target to install renewable energy capacity of 175 GW by 2022 and 500 GW by 2030.

India has introduced various policies to encourage the installation of renewable energy, some of which are mentioned below:

- The Green Day Ahead Market seeks to deepen the renewable energy market by allowing any interested party to generate renewable energy and sell it to the distribution agencies or industries.
- In the Union Budget for financial year 2022–23, the government announced initiatives such as additional incentive schemes for production of solar panels, Sovereign Green Bonds and blended finance, all of which will provide financial resources to promote renewable energy projects.

- The Reserve Bank of India is facilitating the financing of renewable energy projects by providing loans for the small renewable energy sector under its Priority Sector Lending scheme.
- The government has invited bids for 'Scheme for Setting up Manufacturing Zones for Power and Renewable Energy Equipment'. Under the scheme, it has proposed to set up three Manufacturing Zones to cut down on import reliance and build domestic capacity for renewable energy projects.
- The government has set up two funds, the National Clean Energy and Environment Fund and the National Adaptation Fund for Climate Change, to encourage clean power.
- The government has waived off payment of interstate transmission charges on renewable electricity transmission for projects installed up to 30 June 2025.
- The government is implementing the establishment of a Green Energy Corridor in a phased manner to better integrate renewable energy into India's grid system.
- The government has allowed bundling of new and existing thermal and hydropower projects with renewable energy, thus allowing them either to establish such projects or to procure power from renewable energy power plants for supply to other entities.
- Several state governments offer different incentives to industries intending to produce or use renewable energy.
- The Draft National Electricity Policy, 2021 seeks to promote hybrid renewable technology, such as solar-wind, solar-biomass and market-based schemes to promote renewable energy.
- The Indian Renewable Energy Development Agency (IREDA), a government entity, has initiated various schemes to encourage renewable energy projects in India.

India also has a Renewable Energy Certificate (REC) trading system, under which the authorities issue RECs to a renewable energy generator that can be sold to specified entities that are required to derive a part of their energy requirements from renewable energy. These specified entities have a Renewable Purchase Obligation (RPO), an obligation to purchase specific quantity of renewable energy for their energy requirements, intended to promote demand for renewable energy and reduce GHG emissions. Other industries can also voluntarily purchase RECs. The government has recently revised this mechanism to allow industries to fulfil their RPO by purchasing green hydrogen and green ammonia. To further promote renewable energy, this scheme also provides that commercial and industrial consumers voluntarily purchasing renewable power will be provided a rating based on such quantity consumed by them. It further provides that entities utilising renewable energy beyond RPO will be issued a green certificate.

Wind energy

20 | Describe, in general terms, any regulation of wind energy.

The development of wind power projects requires site selection based on factors such as land use permission, availability of wind resource, technically and commercially feasible grid connectivity, transport logistics and environmental acceptability. Wind turbines can be installed only if they have the requisite type and quality certification as specified in relevant guidelines. Developers of wind energy projects are, among other aspects, required to acquire or leasehold land; prepare a Detailed Project Report; obtain various statutory clearances from authorities such as the Ministry of Environment, Forest and Climate Change, the Ministry of New and Renewable Energy, the State Electricity Department, State Pollution Control Boards and other departments of the state where the project is located; and obtain connectivity from Central or State Transmission Utility.

To promote wind energy in India, the Union and State Governments also offer various benefits, including but not limited to, financial assistance, tax holidays and land allocation for Wind Energy Parks and Wind-Solar Hybrid Energy Parks. The union government has also announced the National Wind-Solar Hybrid Policy to promote wind-solar hybrid projects. Similarly, the National Offshore Wind Energy Policy, 2015 has also been introduced to encourage offshore wind energy projects in India.

Solar energy

21 | Describe, in general terms, any regulation of solar energy.

Developers of solar energy projects are required to ensure specifications and quality control as per the guidelines issued by the Ministry of New and Renewable Energy. They are also required to obtain permits from authorities such as the Ministry of Environment, Forests and Climate Change, the Ministry of New and Renewable Energy, the State Electricity Department, State Pollution Control Boards and other departments of the state where such project is located.

The pricing of solar energy in India is usually determined by competitive tariff-based bidding by inviting tenders from interested project developers and such price is then mentioned in the Power Purchase Agreements signed between the distribution agencies and the project developers.

The union and state governments also offer various benefits, including but not limited to, financial assistance, tax holidays and land allocation to encourage solar energy projects such as the establishment of Solar Parks and Ultra Mega Solar Parks; setting up of Grid Connected Solar Rooftop in residential buildings; installation of off-grid solar devices and solar-based LED lights; and the use of solar power pumps in farms for irrigation. A dedicated agency, Solar Energy Corporation of India, has been set up to develop itself and to also facilitate the private sector to develop renewable energy projects in India, particularly solar energy, wind energy and solar-wind hybrid energy.

To encourage domestic manufacturing of solar power equipment in India, the union government has approved the Production Linked Incentive Scheme for manufacture of solar photovoltaic modules and advanced chemistry cell battery storage. The union budget for financial year 2022–2023 has also announced an additional allocation for this scheme.

Hydropower, geothermal, wave and tidal energy

22 | Describe, in general terms, any regulation of hydropower, geothermal, wave or tidal energy.

India classifies projects above 25 MW as large hydropower projects, whereas those up to 25 MW are micro, mini and small hydropower projects. These project developers require permits from authorities such as the Ministry of Environment, Forests and Climate Change, the Ministry of New and Renewable Energy, the State Electricity Department, the State Irrigation Department, State Pollution Control Boards and other departments of state where the project is located. Various studies are required to be undertaken for environmental clearance, forest clearance, cumulative impact assessment, carrying capacity studies, etc, before establishing these projects.

The pricing of hydro energy in India is usually determined by competitive tariff-based bidding by inviting tenders from interested project developers.

The government is encouraging small hydropower projects to avoid various problems associated with large hydropower projects, such as large-scale deforestation and resettlement of local communities. The government provides support to these projects in various forms such as in developing testing, standardisation and training facilities, support

for survey and investigation, Detailed Project Report preparation, capital subsidy for projects, support for renovation and modernisation, etc. The government also provides budgetary support for the construction of flood moderation and enabling infrastructure (roads, bridges, etc.) for hydropower projects. State governments are responsible for issuing proposals for and allotting these projects.

Apart from the above, the government is also attempting to harness the renewable energy potential of geothermal and ocean sources, but these have not yet been established on a commercial scale in India.

Waste-to-energy

23 Describe, in general terms, any regulation of production of energy based on waste.

Waste-based energy projects are being encouraged by the government to address the menace of the increasing amount of waste generated in Indian urban areas and to utilise the energy-generating capacity of such waste. These projects require permits from different authorities, such as the Ministry of Environment, Forests and Climate Change, the Ministry of New and Renewable Energy, the State Nodal Agency, the local government authority, the State Electricity Department, the State Pollution Control Board and other departments of state where the project is located. The pricing is usually determined by competitive tariff-based bidding by inviting tenders from interested project developers.

The government has launched a programme to generate biogas/bio-CNG/power from industrial waste, sewage treatment plants, urban and agricultural waste and municipal solid waste. The government also offers financial assistance based on the capacity to generate energy. Valid until 31 March 2021, further continuation of this scheme is currently under review.

India has so far established 249 waste-to-energy plants, 11 power plants based on municipal solid waste, and 50.8 lakh small biogas plants.

Biofuels and biomass

24 Describe, in general terms, any regulation of biofuel for transport uses and any regulation of biomass for generation of heat and power.

Energy projects based on biomass usually utilise crop residue, animal waste, food processing waste, wood waste and agriculture waste as fuel to generate energy. Biofuel plants usually utilise sugar cane, grain starch (wheat, rice, corn, barley, etc) and agricultural waste to produce biofuel or ethanol. These projects require permits from different authorities, such as the Ministry of Environment, Forests and Climate Change, the Ministry of New and Renewable Energy, the State Nodal Agency, the local government authority, the State Electricity Department, the State Pollution Control Board and other departments of state where the project is located.

India has so far established 819 biomass-based power plants. The government has launched a programme to encourage generation of energy from agricultural waste whereby financial assistance is offered for these projects. The government also offers financial assistance for biomass cogeneration projects that involve sugar mills and other industries utilising biomass to generate power. Valid until 31 March 2021, further continuation of this scheme is currently under review.

In relation to biofuels, the government has also notified the National Biofuel Policy and Ethanol Blended Programme to boost supply and demand for biofuels in India. It seeks to achieve 20 per cent ethanol blending of petrol by 2025–26. It is also providing financial assistance through an interest subvention scheme for the enhancement of ethanol production capacity from different sources, such as sugar cane and grains; higher market prices for ethanol suppliers; reduction in the Goods and Services Tax levied on ethanol; and increased incentives to sugar mills based on sugar diverted for ethanol production. Additional duty of INR 2 per litre has also been proposed on unblended fuel in the Union Budget 2022–23 to discourage the use of such fuel. The government is also considering further expediting regulatory clearances for ethanol production by setting up a single window system.

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Carbon capture and storage

25 Describe, in general terms, any policy on and regulation of carbon capture and storage.

Currently, there is no policy or regulation on carbon capture and storage.

CLIMATE MATTERS IN TRANSACTIONS

Climate matters in M&A transactions

26 What are the main climate matters and regulations to consider in M&A transactions and other transactions?

There are various climate-related issues to consider in commercial transactions such as M&A, equity investment, lending and others, which are largely dependent on the nature of the business done by the target entity. Some of the generally considered aspects are: renewable energy consumption by the target entity; present GHG emissions (Scope 1, 2 and 3) of the target entity and future GHG emissions projection; identification and analysis of climate change related issues, risks and opportunities; policies and strategies to address these issues, risks and opportunities; the potential financial impact of these issues, risks and opportunities on the business; science-based targets of the entity consistent with the goals of the Paris Agreement; sustainability initiatives taken by the target entity; investment in R&D to address climate change; participation by the target entity in emissions-related market schemes; steps taken for climate change mitigation and adaptation and oversight by the Board of Directors and senior management on these matters.

UPDATE AND TRENDS

Emerging trends

27 Are there any emerging trends or hot topics that may affect climate regulation in your country in the foreseeable future?

There are various trends or topics that are expected to affect climate regulation in India. Some of these are:

- The Union Government and the state of Gujarat have released proposals to initiate the process of carbon emissions allowance and trading, but these policies have not yet been finalised. As a party to the Paris Agreement, India will also participate in market schemes for trading of emissions reduction units generated by climate change mitigation projects.
- Regulators are also focussing on the disclosure of Environment, Social and Governance factors by businesses to assess the impact of non-financial aspects such as climate change on the economy. It is currently mandatory for the top 1,000 listed entities in India, but its scope is expected to be widened in the near future.
- The government is also focussing on developing India as a manufacturing and exporting hub for Green Hydrogen. The Green Hydrogen Policy, 2022 has been released to encourage the production and use of green hydrogen and green ammonia for emissions reduction, especially in the hard-to-abate sectors.
- The government is also focussing on generating financial resource for undertaking climate change mitigation and adaptation projects in India. The mechanisms for such finance, including green bonds, sustainability-linked bonds, transition bonds and blended finance, are major points of discussion. The union budget for financial year 2022–23 has also proposed the issue of Sovereign Green Bonds and blended finance for climate change-related activities.
- The government is also focussing on a circular economy system to essentially promote resource efficiency and reduction in the extraction of new resources for economic activities. This aspect has been enforced in the transportation sector through the mandatory scrapping of end-of-life vehicles. The union budget for financial year 2022–23 has also proposed policy actions for other sectors to implement the circular economy.

Indonesia

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MAIN CLIMATE REGULATIONS, POLICIES AND AUTHORITIES

International agreements

1 | Do any international agreements or regulations on climate matters apply in your country?

The United Nations Framework Convention on Climate Change, its Kyoto Protocol and Paris Agreement apply in Indonesia. Indonesia ratified the three instruments under Law No. 6 of 1994 regarding the Ratification of the United Nations Framework Convention on Climate Change, dated 1 August 1994 (UNFCCC); Law No. 17 of 2004 regarding the Ratification of the Kyoto Protocol to the United Nations Framework Convention on Climate Change, dated 28 July 2004; and Law No. 16 of 2016 regarding the Ratification of the Paris Agreement to the United Nations Framework Convention on Climate Change, dated 24 October 2016. In compliance with its obligation as a Non-Annex I Party, Indonesia also submitted its second Biennial Update Report on 21 December 2018.

International regulations and national regulatory policies

2 | How are the regulatory policies of your country affected by international regulations on climate matters?

As a party to the UNFCCC, the Kyoto Protocol and Paris Agreement to the UNFCCC, Indonesia has shaped its national regulatory policies based on its international pledge in its Nationally Determined Contribution (NDC) to reduce greenhouse gas (GHG) emissions by 29 per cent to 41 per cent of the business-as-usual scenario by 2030. The laws and regulations in Indonesia on climate matters (eg, Presidential Regulation No. 98 of 2021 on Carbon Economic Value (the Carbon Regulation), refer to the UNFCCC, its Conferences of the Parties results, and the NDC as considerations in enacting these regulations.

Indonesia also previously implemented a Reducing Emissions from Deforestation and Forest Degradation (REDD+) Programme with international support.

Main national regulatory policies

3 | Outline recent government policy on climate matters.

To achieve its NDC target to reduce GHG emissions, the government of Indonesia recently enacted a carbon tax and carbon economic value, governed under Law No. 7 of 2021 regarding Harmonized Tax (the Harmonized Tax Law) and the Carbon Regulation, and climate change information systems to monitor and report GHG emissions, such as the National Greenhouse Gases Inventory System and the National Registry System on Climate Change Control.

Other existing national regulations and policies for specific sectors, such as the energy, industrial processes and product use, agriculture and forestry, and waste sectors, among others, have also been enacted to govern climate matters in Indonesia.

Going forward, we project that the Indonesian government will issue other implementing regulations on climate change (eg, implementing regulations for carbon economic value), which will address carbon market mechanisms, among other topics.

Main national legislation

4 | Identify the main national laws and regulations on climate matters.

Other than the laws enacted to ratify international climate conventions, Indonesia does not have a main law that specifically regulates climate matters. Indonesia still relies on its environmental laws as the main framework to help mitigate climate change. These include Law No. 32 of 2009 regarding Environmental Protection and Management, as amended by Law No. 11 of 2020 on Job Creation, and Law No. 41 of 1999 regarding Forestry, as amended by Law No. 11 of 2020 on Job Creation, including their implementing Government Regulations (Government Regulation No. 23 of 2021 regarding Organization of Forestry and Government Regulation No. 22 of 2021 regarding Organization of Environmental Protection and Management, respectively). There also are other regulations concerning agriculture, peatlands, energy and transportation, industry and waste management, among others.

National regulatory authorities

5 | Identify the national regulatory authorities responsible for climate regulation and its implementation and administration. Outline their areas of competence.

There are three national regulatory authorities responsible for the implementation and monitoring of climate regulations in Indonesia, which are the Minister of Environment and Forestry (MOEF), the Environmental Fund Management Agency (BPDLH), and the Peatland Restoration Agency (BRG).

MOEF is the chief institution responsible for establishing and implementing policies regarding climate change impact control and ozone layer protection. Any matters related to climate change will be governed and supervised by the MOEF; this includes submission of Indonesia's NDC and Biennial Update Report under the UNFCCC.

The BPDLH is a fund management agency under the Ministry of Finance (MOF) and is the government agency responsible for facilitating a funding system for the implementation of GHG reduction projects from the national to sub-national levels. All climate change funding, including the mobilisation and placement of fund resources, will be managed and overseen by the BPDLH.

The BRG is a non-ministerial agency formed in 2016 that reports directly to the President. Its main mission is to maintain and restore peat ecosystems, focusing on sub-national peat projects in Kalimantan, Sumatra and Papua.

In addition to the three above-mentioned government institutions, the MOF governs any climate change matters related to fiscal and tax instructions. The MOF was the government institution that took the lead in pushing for the implementation of a carbon tax in Indonesia. Carbon tax provisions are governed under the Harmonized Tax Law. Carbon emissions having a negative impact on the environment will be subject to a minimum carbon tax of 30 rupiah per kilogram of CO_2e or other equivalent measurement unit (equivalent to around US$2.1 per tCO_2e).

GENERAL NATIONAL CLIMATE MATTERS

National emissions and limits

6 What are the main sources of emissions of greenhouse gases (GHG) (or other regulated emissions) in your country and the quantities of emissions from those sources? Describe any limitation or reduction obligations. Do they apply to private parties in your country?

Based on Indonesia's Third Biennial Update Report (BUR) under the United Nations Framework Convention on Climate Change (Third Biennial Update), the main sources of GHG emissions in Indonesia in 2019 were, by order from highest:

- agriculture, forestry and other land use (AFOLU) sector;
- energy sector;
- waste sector; and
- industrial processes and product use (IPPU) sector.

The AFOLU sector contributed 1,030,154 Gg CO_2e (50.13 per cent), the energy sector contributed 636,453 Gg CO_2e (34.49 per cent), the waste sector contributed 120,333 Gg CO_2e (6.52 per cent), and the IPPU sector contributed 58,128 Gg CO_2e (3.15 per cent). Indonesia's total 2019 GHG emissions were 1,845,067 Gg CO_2e (these data reflect only the GHG emissions for CO_2, CH_4 and N_2O).

As a party to the Paris Agreement, the Indonesian government has an international obligation to reduce its GHG emissions according to its Nationally Determined Contribution (NDC) target. This obligation includes the submission of a progress report on climate change mitigation and adaptation to the United Nations Framework Convention on Climate Change every two years for the BUR.

With the enactment of the Harmonized Tax Law, a cap and tax scheme will be applied to companies in the private sector with carbon emissions. This scheme will first be implemented for coal-fired power plants.

National GHG emission projects

7 Describe any major GHG emission reduction projects implemented or to be implemented in your country. Describe any similar projects in other countries involving the participation of government authorities or private parties from your country.

There have been several major GHG emission reduction projects implemented in Indonesia. Under the Kyoto Protocol, there were approximately 47 Clean Development Mechanism (CDM) projects as of 2018 in Indonesia. CDM projects promote carbon emission reduction through the sale of Certified Emission Reduction credits to countries with emission-reduction commitments. Examples of CDM projects implemented in Indonesia include the Bekasi Power Combined Cycle Power Plant Project and the Multi Nitro Indonesia Nitrous Oxide Abatement Project.

As deforestation and forest degradation is the major source of emissions in Indonesia, the government of Indonesia focussed its policy on the implementation of the Reducing Emissions from Deforestation and Forest Degradation (REDD+) Program by establishing the Presidential REDD+ Agency. REDD+ projects in Indonesia also are supported by international funding, including approximately US$1 billion from the Norwegian government, among others. REDD+ projects include result-based payment for carbon reduction yields (ie, the Bujang Raba Community Payment for Ecosystem Services Project, Project Forest and Climate Change Programme, and the Katingan Peatland Restoration and Conservation Project).

In the renewable energy sector, the government of Indonesia plans to have at least 23 per cent of its total primary energy supply generated by renewable sources by 2025. The government has released several policies, including the National Energy Policy (KEN) 2014–2050 in support of this goal.

Indonesia will also implement carbon tax policies and carbon trading mechanisms based on the Carbon Regulation and the Harmonized Tax Law.

DOMESTIC CLIMATE SECTOR

Domestic climate sector

8 Describe the main commercial aspects of the climate sector in your country, including any related government policies.

The commercial aspects of the climate sector in Indonesia are mostly driven by private sector investment through international voluntary carbon trading schemes, for example, Verified Carbon Standard issued by Verra, Gold Standard Credits or Voluntary Emission Reductions issued by Gold Standard, and Certified Emissions Reductions issued under the Clean Development Mechanism under the Kyoto Protocol.

There are several ongoing forestry and renewable energy projects that have been registered and verified by Verra. The Sumatra Merang Peatland Project, Rimba Raya Biodiversity Reserve Project, and Katingan Peatland and Restoration and Conservation Project have managed to reduce emissions from the agriculture, forestry and other land use sector and sell their emissions reductions to international stakeholders. In the renewable energy sector, the 55.5 MW Natural Gas Power Generation Project at Batu Aji village, in Riau Islands province, the Mobuya Mini Hydro Power Plant 3 × 1,000 kW, in North Sulawesi province, the Lahendong Unit 5 and Unit 6 Geothermal Project, and the 50 MW Sipansihaporas Hydro Power Plant, in North Sumatra province, among others, have registered their renewable sources.

Other types of sustainable projects (eg, waste collection and waste recycling) are in the process of verifying and validating their plastic credits.

Under the Carbon Regulation, the government intends to create national carbon market schemes.

GENERAL GHG EMISSIONS REGULATION

Regulation of emissions

9 Do any obligations for GHG emission limitation, reduction or removal apply to your country and private parties in your country? If so, describe the main obligations.

The Indonesian government recently enacted the Carbon Regulation. The Carbon Regulation acknowledges the term 'Emission Ceiling', which is defined as the highest emission level approved for every sector and business or activity. The calculation of the Emission Ceiling will be based on the GHG sectoral baseline, sectoral NDC target, inventory of GHG and the target achievement period. In addition, the Harmonized Tax Law imposes a cap and tax scheme.

Notwithstanding the foregoing, the Minister of Environment and Forestry (MOEF) has issued several regulations to control pollution from certain sectors. MOEF Regulation No. 11 of 2021, which concerns

emission quality standards for generator sets, does not provide a maximum emission load, but it does require business actors to calculate the emission load using the manual method through laboratory testing. Other industries, such as pulp and paper, and oil and gas, are required to monitor their emissions and input the data to the Information on Continuous Industrial Emission Monitoring System.

GHG emission permits or approvals

10 | Are there any requirements for obtaining GHG emission permits or approvals? If so, describe the main requirements.

There are no requirements for obtaining GHG emission permits or approvals under the prevailing regulations. Nonetheless, in general, business actors are required to obtain an environmental licence issued by the Online Single Submission system. The type of licence depends on the risk level of a business activity (ie, low, medium and high risk). See the environment chapter for elaboration.

Oversight of GHG emissions

11 | How are GHG emissions monitored, reported and verified?

GHG emissions are monitored, reported and verified through the National Registration System (SRN), which was first launched in November 2016. The SRN is regulated under MOEF Regulation No. P.71/MENLHK/SETJEN/KUM.1/12/2017 of 2017 regarding the Implementation of the National Registry System Controlling Climate Change (MOEF Reg. 71/2017) enacted on 31 January 2018. This regulation sets forth that the SRN operates to avoid double counting and to implement the principles under the Paris Agreement.

The SRN regulates registration and certification for all types of climate change actions (eg, adaptation actions, which include food security, energy independence, water security, health, municipal and rural civilisations, infrastructure, coast and small islands, and ecosystem security, and mitigation actions, which include energy, land use, land use change and forestry, agriculture, industrial process and product use and sewage, among others).

GHG EMISSION ALLOWANCES (OR SIMILAR EMISSION INSTRUMENTS)

Regime

12 | Is there a GHG emission allowance regime (or similar regime) in your country? How does it operate?

The Carbon Regulation aims to govern the procedure for setting the baseline for GHG emissions, which shall be a determining factor to stipulate climate change mitigation targets. The Carbon Regulation introduces the term 'Emission Ceiling', which is the highest emission level for certain sectors. The Emission Ceiling will be determined by the ministry overseeing each sector.

Registration

13 | Are there any GHG emission allowance registries in your country? How are they administered?

Indonesia has launched the SRN to register GHG emissions, as regulated under MOEF Reg. 71/2017 and further regulated under the Carbon Regulation. This is in line with the principles in the Carbon Regulation, which stipulates that the SRN has the function:

- to act as government recognition for the contribution of carbon economic value to achieve the NDC targets;
- as a data and information system for mitigation actions and implementation of carbon economic value;
- to avoid double counting of mitigation actions; and
- to help trace carbon unit transfers and utilisation. SRN facilitates registration for all sorts of climate change mitigation and action, including REDD+ initiatives.

Project developers shall register their projects with the SRN via http://ditjenppi.menlhk.go.id/srn. The data will then be validated by the SRN administrator. Following the validation, the administrator shall issue a registry number and the projects shall be verified. The verification process is based on the procedures set out in sectoral regulations and pursuant to ISO standards. In addition, the MOEF may issue certificates of appreciation to verified contributors of climate change projects.

Obtaining, possessing and using GHG emission allowances

14 | What are the requirements for obtaining GHG emission allowances? How are allowances held, cancelled, surrendered and transferred? Can rights in favour of third parties (eg, a pledge) be created on allowances?

The Carbon Regulation contemplates that certain business sectors that are subject to a regulated emissions ceiling will be required to obtain a GHG emission allowance in the form of a technical approval issued by the relevant sectoral ministry (articles 50(2) and 79(1) of the Carbon Regulation). However, because the Carbon Regulation is only an umbrella regulation with respect to climate change control and emissions reduction, more specific implementing regulations issued by each sectoral ministry will need to be observed. For example, technical approvals in the industrial sector shall be regulated by the Ministry of Industry, while the Ministry of Energy and Mineral Resources will regulate technical approvals for the oil and gas sector. This requirement has not yet been put in place and may differ from sector to sector. For business sectors not subject to future emissions ceilings, there are no provisions regarding the requirement to obtain a technical approval for the emissions allowance.

TRADING OF GHG EMISSION ALLOWANCES (OR SIMILAR EMISSION INSTRUMENTS)

Emission allowances trading

15 | What GHG emission trading systems or schemes are applied in your country?

The government of Indonesia, under the National Climate Change Committee (NCCC), did at one time plan to launch a Voluntary Carbon Market. In October 2013, the NCCC issued a handbook to introduce a carbon trading market scheme in Indonesia. However, the carbon market was never launched and the NCCC was dissolved in 2015.

Notwithstanding the foregoing, the Carbon Regulation recognises and regulates a carbon market. Domestic and international carbon trading shall be done through emission trades and emission offsets. The Carbon Regulation proposes requirements for both domestic and international carbon trading.

Under the emission trading scheme, trade will be conducted by businesses and activities with emissions either above the regulated emission ceiling or below the regulated GHG emission ceiling.

The GHG emission offset scheme only applies to businesses and activities without any determined emission ceiling that provide a statement of emission reduction using the results of mitigation actions from other businesses and activities. To conduct GHG emission offset, businesses and activities with an emission surplus can sell their excess, and vice versa.

Trading agreements

16 | Are any standard agreements on GHG emissions trading used in your country? If so, describe their main features and provisions.

There are no standard agreements on GHG emissions trading used in Indonesia. For voluntary carbon trading schemes by private sectors, the arrangement is a business-to-business agreement and there are no standardised agreements required by applicable laws and regulations.

SECTORAL REGULATION

Energy sector

17 | Give details of (non-renewable) energy production and consumption in your country. Describe any regulations on GHG emissions. Describe any obligations on the state and private persons for minimising energy consumption and improving energy efficiency. Describe the main features of any scheme for registration of energy savings and for trade of related accounting units or credits.

Indonesia's energy mix consists of approximately 66 per cent fossil fuels: refined petroleum, coal, gas and other non-renewable energy sources. Energy is consumed to meet the demands of the transportation, industry, household and commercial sectors. The energy sector is the second-highest source of GHG emissions in Indonesia.

The general national strategy to minimise energy consumption is governed under PR 61/2011, PR 71/2011 and the National Energy Policy (KEN) 2014–2050. There is no specific GHG emissions limitation to minimise energy consumption. However, the government aims to impose a carbon tax and emissions ceiling through the Harmonized Tax Law and Carbon Regulation, respectively.

Other sectors

18 | Describe, in general terms, any regulation on GHG emissions in connection with other sectors.

The general regulations on GHG emissions in connection with other sectors are:

- PR 61/2011 regarding the National Action Plan for Reduction of GHG Emissions, which sets out specific mitigation and adaptation action plans for the agriculture, forestry and peat land, energy and transportation, industry and waste management sectors;
- PR 71/2011 regarding the Implementation of the National GHG Inventory, which mandates the implementation of a national inventory system for GHG in the above-mentioned sectors; and
- Presidential Regulation No. 18 of 2020 regarding National Mid-Term Development Plan 2020–2024 (PR 18/2020), which sets out Indonesia's GHG emissions targets in several key sectors, including forestry, peat land, agriculture, energy, transportation, industry and waste management.

In general, we note that there is a lack of sectoral regulations governing GHG emissions in specific sectors. Nonetheless, for the energy sector, the government has issued the National Energy Policy (KEN) 2014–2050 and Minister of Energy and Mineral Resources (MEMR) Regulation No. 22 of 2019 regarding Procedure for the Implementation of GHG Inventory and Mitigation in the Field of Energy. This MEMR Regulation concerns inventory, reporting, action plans and stakeholders for the mitigation of GHG emissions in the energy sector.

RENEWABLE ENERGY AND CARBON CAPTURE

Renewable energy consumption, policy and general regulation

19 | Give details of the production and consumption of renewable energy in your country. What is the policy on renewable energy? Describe any obligations on the state and private parties for renewable energy production or use. Describe the main provisions of any scheme for registration of renewable energy production and use and for trade of related accounting units or credits.

Until mid-2020, the share of renewable energy in Indonesia's total primary energy supply had only reached 10.9 per cent. Coal-fired power plants still dominate the supply of electrical energy in Indonesia, while renewable energy power plants account for 14.69 per cent of the total national installed power generation capacity. Hydropower and geothermal power account for a majority of the renewable energy mix.

GR 18/2020 includes targets and strategies to strengthen economic resilience and strengthen infrastructure to support economic development, which includes a discussion on energy. Pursuant to the National Mid-Term Development Plan, the government plans to reach a renewable energy share of 23 per cent by 2025, a goal also outlined in Indonesia's Nationally Determined Contribution (NDC). To achieve energy efficiency, the government plans to increase the efficiency of energy and electric power utilisation by:

- developing an energy service company;
- expanding, rehabilitating and increasing the capacity of the transmission and distribution system;
- developing information management and data control systems;
- developing and utilising smart grid technology; and
- utilising high-efficiency and low-emission or HELE technology.

To express its commitment on renewable energy, Indonesia released the National Energy Policy (KEN) 2014–2050, which is a guideline to provide direction for national energy management to achieve national energy independence and security, supporting sustainable national development. Based on the KEN, the government plans to maximise the use of renewable energy, minimise the use of petroleum, optimise the use of natural gas and new energy (such as coal bed methane, liquified coal, gasified coal, hydrogen and nuclear), and use coal as a mainstay of national energy supply.

In the electricity sector, PT Perusahaan Listrik Negara (PLN), the Indonesian state-owned electricity enterprise, which has a monopoly on electricity distribution in Indonesia, recently introduced the Renewable Energy Certificate programme, aiming to increase awareness of renewable energy. Power producers will receive a certificate for every one megawatt-hour of renewable energy-based electricity they produce. Such certificates are tradeable and can be used by companies to offset their carbon footprint.

Wind energy

20 | Describe, in general terms, any regulation of wind energy.

Wind power plants generating power supply for the public interest are considered a high-risk business pursuant to the recent risk-based licensing categories under Government Regulation No. 5 of 2021 regarding Risk-Based Licensing (GR 5/2021) and it is necessary to obtain a business licence for electricity supply for public purpose. The term 'business licence' replaces the previously applicable business licence for power supply business activities. Power producers apply to the Minister of Energy and Mineral Resources (MEMR) for a business licence online via the Online Single Submission system.

The prerequisites for a power producer to obtain a business licence for power supply for public purpose include the fulfilment of several administrative, environmental and technical commitments, as follows:

- Feasibility study of the power generation business that contains, among other things:
  - financial feasibility study;
  - operational feasibility study;
  - network interconnection study;
  - installation location;
  - one-line diagram;
  - type and capacity of the business envisaged;
  - construction schedule; and
  - operational schedule prepared by a certified business entity.
- Signed power purchase agreement (PPA) between the power producer and the proposed electricity buyer, which in this case is PLN, with the electricity tariff or pricing provision having been approved by the MEMR or the governor of the relevant region pursuant to its authority. PLN controls the transmission, distribution and sale of electric power in all regions in Indonesia. Therefore, any independent power producer (IPP) will be required to enter into a PPA with PLN.
- Other prerequisites include fulfilment of principal commitments for any facilities and infrastructure projects, such as spatial utilisation confirmation, environmental impact assessment (AMDAL), building approval (this is the Indonesian term for a building permit), Functional-Worthiness Certificate (this is the Indonesian term for a certificate of occupancy) and other applicable permits; hiring qualified technical personnel who possess the required competence certificates to operate the plant and the machinery and equipment therein before the commencement of the plant's operation; and procuring and installing equipment conforming to mandatory National Indonesian Standard requirements, if any and as applicable, before the commencement of the plant's operation.

The government of Indonesia's support for the development of renewable energy power plants is further refined under MEMR Regulation No. 50 of 2017 regarding Utilisation of Renewable Energy Resources for the Provision of Electricity, as amended by MEMR Regulation No. 53 of 2018 and, most recently, by MEMR Regulation No. 4 of 2020 (MEMR Regulation 4/2020) (altogether, MEMR Regulation 50/2017 as amended). Under the regulation, there is a specific mandate for PLN to purchase electricity generated from renewable energy.

In general, the purchase of power generated from renewables by PLN can be done through a direct selection offer or direct appointment by PLN. Direct selection typically involves a qualification process in which a minimum of two pre-selected developers submit bids to be evaluated by PLN, with the winning bidder executing a PPA with PLN. Direct appointment, which follows a qualification and evaluation process similar to that for direct selection, except that there only needs to be only one bidder, is also possible under article 4(1a) of MEMR Regulation 50/2017 as amended in the following limited circumstances:

- if the local electricity system suffers a crisis or emergency situation;
- for the purchase of excess electricity, including purchasing electricity through cooperation with the holder of an electricity supply distribution, sale or integrated electricity supply business license covering a specified business area;
- for increased generation capacity at the location of an operating power plant (ie, expansion projects); or
- for the purchase of electricity from a renewable power plant in the event there is only one IPP candidate for the relevant area.

It is worth noting that the more recent MEMR Regulation 4/2020 (as part of the revision of MEMR Regulation 50/2017 as amended) removed the requirement to deliver renewable energy projects to the government as build-own-operate-transfer (BOOT), and now permits projects that are designated on a build-own-operate basis, in addition to BOOT projects.

The electricity tariff is determined by benchmarking the local electricity generation basic cost (BPP) in the region where the electricity is generated against the national average BPP. BPP is PLN's average electricity generation cost as determined annually by the MEMR based on PLN's own recommendation. An exemption to this tariff regime applies only for entities that have been appointed as winners of capacity quotas for renewable energy projects that obtained approval for a specified electricity price from the MEMR prior to the issuance of MEMR Reg. 50/2017 as amended.

MEMR Regulation 50/2017 as amended stipulates that the calculation of the electricity tariff for power generated from renewables is as follows:

- if the local BPP is greater than the national BPP from the previous year, the tariff shall be set at a maximum 85 per cent of the local BPP; or
- if the local BPP is equal to or lower than the national BPP from the previous year, PLN and the relevant IPP can determine the tariff based on a mutual agreement.

At present, the applicable BPP refers to MEMR Decree No. 169.K/HK.02/MEM.M/2021 regarding PLN Electricity Generation Basic Cost for 2020, which sets the national BPP at 1,027.7 rupiah/kWh, while local BPPs range from 848.71 rupiah/kWh to 2,805.50 rupiah/kWh.

A renewable energy power plant can also obtain other incentives as governed under Presidential Regulation No. 4 of 2016 regarding Acceleration of Electrical Infrastructure Development, as amended by Presidential Regulation No. 14 of 2017, in the form of fiscal incentives, ease of licensing, determination of purchase price for each type of renewable energy, establishment of an independent business entity to supply power to PLN and provision of subsidies.

Notwithstanding the foregoing, different rules apply for windmill plants that generate power for private use.

Solar energy

21 | Describe, in general terms, any regulation of solar energy.

Solar power plants are also considered a high-risk business and therefore a business license is required to commence operations.

The prerequisites to obtaining a business licence for a solar power plant are the same as to obtain a business licence for a windmill plant. The applicable electricity tariff for solar power plants is also the same as for windmill plants.

Hydropower, geothermal, wave and tidal energy

22 | Describe, in general terms, any regulation of hydropower, geothermal, wave or tidal energy.

Hydropower, geothermal, wave and tidal energy power plants are also considered high-risk businesses and therefore require a business licence to commence operations.

The prerequisites to obtain a business licence for hydropower, geothermal, wave and tidal energy power plants are the same prerequisites to obtain a business licence for windmill plants. Wave and tidal energy power plants may be required to obtain additional permits (eg, water location permit).

The applicable electricity tariff for hydropower, geothermal, wave and tidal energy power plants is the same as for windmill plants.

Waste-to-energy

23 Describe, in general terms, any regulation of production of energy based on waste.

Waste-to-energy power plants are also considered a high-risk business and therefore a business licence is required to commence operations.

The prerequisites for obtaining a business licence for a waste-to-energy power plant are the same as for a windmill plant. The applicable electricity tariff for waste-to-energy plants is also the same as for windmill plants, except that the electricity tariff for waste-to-energy plants can also refer to the fixed tariff regime under Presidential Regulation No. 35 of 2018 regarding Acceleration of the Establishment of Sustainable Waste-Based Power Plants (PR 35/2018).

PLN's purchase price for electricity generated from a WTE plant with:

- a capacity of up to 20 MW and connected to a high, medium and low-voltage network is US$13.35 cent/kWh; and
- a capacity above 20 MW and connected to a high and medium-voltage network is 14.54 – (0.076 × (electricity generated by the WTE and sold to PLN)).

The above purchase prices are non-negotiable tariffs and without any price escalation adjustment. The tariffs under PR 35/2018 are relatively higher than the tariffs set out in MEMR 50/2017.

For waste-to-energy projects, in addition to electricity sales, the power producer can obtain a tipping fee, which is compensation paid by the regional government to the party handling the waste management activities. PR 35/2018 governs that the tipping fee should not exceed 500,000 rupiah per ton.

PR 35/2018 is part of the government of Indonesia's effort to accelerate the development of WTE projects in the country, with a focus on 12 cities (DKI Jakarta, Tangerang, South Tangerang, Bekasi, Bandung, Semarang, Surakarta, Surabaya, Makassar, Denpasar, Palembang and Manado).

In addition to PR 35/2018, the central government may provide additional state budget to regional governments to support the development of waste-to-energy projects to cover waste management services at a maximum 500,000 rupiah per ton of waste. This support is stipulated under Minister of Environment and Forestry (MOEF) Regulation No. P.24/MENLHK/SETJEN/KUM.1/5/2019 of 2019 regarding Waste Processing Service Fee Assistance in the Context of Accelerating the Construction of Waste Processing Installations for the Production of Electric Power Based on Environmentally Friendly Technology and MOF Regulation No. 26/PMK.07/2021 regarding Funding Support from the State Budget for Waste Management in the Regions.

Biofuels and biomass

24 Describe, in general terms, any regulation of biofuel for transport uses and any regulation of biomass for generation of heat and power.

By virtue of MEMR Regulation No. 32 of 2008, as last amended by MEMR Regulation No. 12 of 2015 regarding the Supply, Utilization, and Trade of Biofuel as Other Fuel Sources, the government has imposed an obligation gradually to increase the percentage of biofuel utilisation in multiple sectors against the total needs. The affected sectors include the power plant, industrial and commercial sectors, as well as public and non-public transportation. For instance, the regulation provides that by January 2025, 30 per cent of the power plant sector must utilise biodiesel (B100) as fuel. Similar obligations are provided for the utilisation of bioethanol and vegetable oil.

The business of biofuel and biomass plants falls under the organic chemical industry from agriculture sources and is considered a high-risk business pursuant to GR 5/2021. It requires a business licence obtained from the OSS system and the business actor must fulfil certain administrative and technical requirements, among others:

- having a biofuel resource;
- data on specification and quality standard for the biofuel;
- trademark and trade name;
- statement letter on occupational safety and health and environmental management;
- statement letter on compliance with the laws and regulations;
- statement letter on willingness to be examined by the relevant authorities; and
- document on list of beneficial ownership.

Biofuel plants are also required to guarantee a sustainable supply to the domestic market, and utilise domestic raw materials, technology and manpower. Other primary requirements include fulfilment of principal commitments for any facilities and infrastructure project (such as spatial utilisation confirmation, AMDAL, building approval, Functional-Worthiness Certificate and other applicable permits).

The market index price of biodiesel fuel is determined monthly by the MEMR after carrying out a verification as stipulated in MEMR Regulation No. 24 of 2021 regarding the Supply and Utilization of Biodiesel Types of Biofuels in the Financing Framework of the Oil Palm Plantation Fund Management Agency, along with MEMR Decree No. 0219 K/12/MEM/2010 of 2010 regarding Market Index Prices of Oil Fuels and Market Index Prices of Biofuels Mixed Into Certain Types of Fuel Oil (as amended by MEMR Decree No. 3053 K/12/MEM/2011 of 2011).

The use of biomass as a renewable energy source for power generation is regulated by Government Regulation No. 79 of 2014 regarding the National Energy Policy, and more specifically under MEMR Regulation 50/2017 as amended. The applicable electricity tariff for biomass used for power plants is the same as for windmill plants.

In addition, power plants using renewable resources and biofuel plants are considered pioneer industries and may be entitled to tax holidays pursuant to Minister of Finance Regulation No. 130/PMK.010/2020 regarding Corporate Tax Reduction Facilities.

Carbon capture and storage

25 Describe, in general terms, any policy on and regulation of carbon capture and storage.

The currently regulated carbon capture and storage activities are those arising from forestry business activities under Law No. 41 of 1999, as last amended by Law No. 11 of 2020 regarding Forestry (the Forestry Law) and its implementing regulations, namely Government Regulation No. 23 of 2021 and other MOEF regulations.

There are minimum regulations for carbon capture and trade in the context of non-forestry sectors such as energy, waste and industrial processes. It is expected that the Carbon Regulation will serve as the primary framework for carbon trading in multiple sectors.

Under the Forestry Law and MOEF regulations, carbon 'storage and sequestration' are categorised as environmental service businesses that may be done in both protected forest and productive forest areas with a forestry utilisation business licence (PBPH). Under a PBPH granted by the MOEF, concession holders may be able to conduct various forestry-type business activities aside from carbon capture and storage, such as timber extraction and natural tourism, in accordance with the MOEF stipulation. This is in contrast with the previous licensing regime, where one forestry business license was exclusive to a single type of forestry business (ie, one licence for timber extraction, one licence for carbon storage or capture). The current PBPH licensing mechanism is an effort by the government to streamline licensing in the forestry sector and induce the conventional logging industry also to conduct carbon capture

or storage, trade or ecosystem restoration and other environmentally beneficial services. This supports the government's commitment as a party to the Paris Agreement.

Under the current regulations, PBPH holders will be obliged to make a non-tax revenue payment to the government for the grant of their PBPH licence, along with provisional payments of fees depending on their yield. We also note that the government is increasing tax imposition, particularly value added tax, in the Harmonized Tax Law, which will impact future carbon credit transactions arising from carbon capture or storage business activities.

CLIMATE MATTERS IN TRANSACTIONS

Climate matters in M&A transactions

26 | What are the main climate matters and regulations to consider in M&A transactions and other transactions?

There are no universal climate change matters and regulations that apply generally to all business actors in the context of M&A transactions and the company or compliance due diligence process customarily involved in such transactions. This is mainly because voluntary GHG emission reductions conducted by business entities or individuals are not yet accounted for in the state's contribution to emissions reduction.

In this regard, climate change-related matters to be considered in connection with an M&A transaction will be those intertwined with a target company's environmental licensing and compliance. For example, whether an industrial company has duly complied with its gas emissions requirement stipulated in its environmental approval. At this juncture, different companies may be subject to different assessments in an M&A due diligence, depending on the nature of their business and the sector in which they operate.

UPDATE AND TRENDS

Emerging trends

27 | Are there any emerging trends or hot topics that may affect climate regulation in your country in the foreseeable future?

The Indonesian government has shown its intent to proceed with framework regulations for a carbon tax and the provision of economic value for carbon trading purposes, through the Harmonized Tax Law and Carbon Regulation, respectively. These developments could have a tremendous effect on climate regulation in Indonesia, especially in terms of controlling and reducing GHG emissions.

Pending the official clarification from the Minister of Environment and Forestry on the recent enactment of the Carbon Regulation, the Minister of Environment and Forestry has circulated a letter to governors and forestry concession holders to halt any new transactions for the sale of carbon emission reductions from forestry concession areas.

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MAIN CLIMATE REGULATIONS, POLICIES AND AUTHORITIES

International agreements

1 | Do any international agreements or regulations on climate matters apply in your country?

Malta is a party (both directly and indirectly as a member of the European Union) to the United Nations Framework Convention on Climate Change (UNFCCC), which it ratified in March 1994. It became an Annex I party to the UNFCCC in 2010. Malta ratified the Kyoto Protocol in November 2001 and the Paris Agreement in October 2016.

As a member of the European Union, Malta is obliged to abide by, and implement, the EU's climate-related legislative instruments.

International regulations and national regulatory policies

2 | How are the regulatory policies of your country affected by international regulations on climate matters?

As an EU member state, Malta's climate action is primarily driven by EU climate policy, being also obliged to abide by relevant EU legislative instruments. Its membership in the EU and its Annex I status mean that Malta, over the past decade, has had to step up its efforts in climate action, in terms of both mitigation and adaptation. These efforts were further strengthened following the ratification of the Paris Agreement. Malta is now working towards achieving the objectives of the EU's 2030 Energy and Climate Framework, and the decarbonisation of Europe by 2050.

Main national regulatory policies

3 | Outline recent government policy on climate matters.

Malta's focus in recent years has been to replace its inefficient conventional electricity production infrastructure and to introduce liquefied natural gas (LNG) as the fuel for power generation, which until now was heavy fuel oil. It additionally commissioned and has put in operation the 200 MW interconnector with the European grid. These developments will result in significant primary energy savings and in substantial reductions in GHG emissions from the energy sector.

Malta's climate policy for the period up to 2030 is set out in its National Energy and Climate Plan of 2019 (NECP). The plan outlines Malta's national objectives and contributions for 2030 in the areas of decarbonisation, renewable energy and energy efficiency. It also describes the policies and measures required to be implemented to reach these objectives. The adoption of the EU's new climate framework in April 2021 led Malta to launch a public consultation for a Low Carbon Development Strategy (LCDS) which, although aligned with the NECP, sets out a pathway for emission reduction up to 2050.

Malta has also focused on adaptation strategies and implemented the National Change Adaptation Strategy, which identifies the principal strategic climate impacts likely to affect Malta and outlines actions to be taken. Some of the actions delineate measures to be taken on the design of buildings that should be improved, if necessary, through enforcement and economic disincentives or incentives; and to maximise passive cooling supported by the education of households.

Additionally, Malta has introduced a number of fiscal instruments, mainly environmental taxes, to discourage the use of environmentally damaging activities such as the burning of fossil fuels, while promoting other alternative and more efficient energy sources. Overall, these taxes can be grouped into three categories: energy, transportation, and pollution and resources. In terms of energy, the taxes comprise:

- carbon taxes and taxes on energy products for transportation such as diesel and petrol;
- taxes on energy products for stationary use (coal, oil products, electricity, natural gas); and
- taxes on greenhouse gases.

With respect to transport, taxes comprise road usage tax, and taxes on the import, sale and registration of motor vehicles. Lastly, pollution and resource taxes comprise taxes on air and water pollution, taxes on waste management and on raw material extraction.

Main national legislation

4 | Identify the main national laws and regulations on climate matters.

In terms of mitigation, the reduction of emissions is mainly regulated by what is known as the Effort Sharing Regulation (Regulation (EU) 2018/842 of the European Parliament and of the Council of 30 May 2018 on binding annual greenhouse gas emission reductions by member states from 2021 to 2030 contributing to climate action to meet commitments under the Paris Agreement and amending Regulation (EU) No 525/2013). EU Regulations are directly applicable under Maltese law and thus the Regulations form part of the national legislation without the need for formal transposition. The Regulation commits each member state to specific reduction targets for those sectors of the economy that fall outside the scope of the EU Emissions Trading System (ETS), such as transport, agriculture and waste.

The Promotion of Energy from Renewable Sources Regulations (Subsidiary Legislation 545.35) is the main piece of legislation governing generation of electricity from renewable sources. These Regulations govern both the reduction in emissions and the promotion of energy from renewable sources, and set out the renewable energy targets that Malta is obligated to achieve by 2020. With respect to reduction of GHG emissions in particular, Malta must reduce these emissions by 10 per cent against 1995 levels. The Regulations also contain provisions for the implementation of national support schemes and cooperation mechanisms among EU member states.

Other main climate-related laws and regulations include:

- the Climate Action Act (Chapter 543 of the Laws of Malta), which sets out the guiding principles for the mitigation of GHG emissions;
- the Energy Efficiency Regulations (Subsidiary Legislation 545.33), which establish a framework for the promotion of energy efficiency to ensure the achievement of the Energy Union's 2020 headline targets on energy efficiency of 20 per cent and its headline targets on energy efficiency of at least 32.5 per cent for 2030. These regulations also lay down rules designed to remove barriers in the energy market and overcome market failures that impede efficiency in the supply and use of energy;
- Biofuels, Bioliquids and Biomass Fuels (Sustainability Criteria) Regulations (Subsidiary Legislation 545.37);
- the Industrial Emissions (Integrated Pollution Prevention and Control) Regulations (Subsidiary Legislation 549.77), which provide a framework for the prevention and control of pollution arising from industrial activities;
- the European Union Greenhouse Gas Emissions Trading Scheme for Stationary Installations Regulations (Subsidiary Legislation 423.50); and
- the European Union Greenhouse Gas Emissions Trading Scheme for Aviation Regulations (Subsidiary Legislation 423.51).

National regulatory authorities

5 Identify the national regulatory authorities responsible for climate regulation and its implementation and administration. Outline their areas of competence.

The Malta Resources Authority, a body set up within the Ministry for the Environment, Energy and Enterprise, is the entity responsible for certain climate-related matters, namely climate change reporting and the operation of the ETS, for both stationary installations and aviation.

The Energy and Water Agency, also set up within the Ministry for the Environment, Energy and Enterprise, is the entity tasked with formulating and implementing national policies in the energy and water sectors. With respect to climate action, the agency is responsible for the implementation of the legislation and the policy measures related to renewable energy and energy efficiency. The formulation and implementation of national support schemes promoting the use of renewable energy also fall within the Agency's competence.

Additionally, the Authority for Transport in Malta is responsible for implementing measures to reduce emissions in the transport sector. In 2016, the Authority adopted the Transport Master Plan, which has a horizon up to 2025 and sets out several measures aimed at achieving low-emission mobility, including the electrification of vehicles.

GENERAL NATIONAL CLIMATE MATTERS

National emissions and limits

6 What are the main sources of emissions of greenhouse gases (GHG) (or other regulated emissions) in your country and the quantities of emissions from those sources? Describe any limitation or reduction obligations. Do they apply to private parties in your country?

As reported in Malta's 2030 National Energy and Climate Plan, the main contributors to GHG emissions are the following:

- Energy and transport: the energy industry and the transport sectors are the two main contributors of CO_2 emissions, together making up over 80 per cent of total CO_2 emissions. These sectors also contribute to nitrous oxide emissions with a combined share of approximately 11 per cent of total emissions.
- Waste and agriculture: these two sectors are the main contributors of methane emissions, with the waste sector accounting for approximately 80 per cent of the total share of methane emissions, and agriculture accounting for approximately 18 per cent. The agriculture sector is the largest contributor of nitrous oxide emissions, with a share of over 70 per cent, while the waste sector accounts for just over 12 per cent.

Malta has an obligation, under the Effort Sharing Decision, to reduce its GHG emissions by 19 per cent compared with 2005.

National GHG emission projects

7 Describe any major GHG emission reduction projects implemented or to be implemented in your country. Describe any similar projects in other countries involving the participation of government authorities or private parties from your country.

Major GHG reduction projects in the energy sector include replacing inefficient conventional electricity production infrastructure and introducing liquefied natural gas (LNG) as fuel for power generation. To this end, Malta closed its inefficient Marsa Power Station, completed and placed in operation the 200 MW interconnector with the European grid, and commissioned a new 205 MW gas-fired, high-efficiency combined cycle gas turbine power plant as well as an LNG facility for the provision of natural gas. In addition, the 149 MW power plant, which comprises eight diesel engines, has been converted to run on natural gas instead of heavy fuel oil.

In addition, Malta has implemented various energy-reducing schemes, including financial support for photovoltaic systems of at least 1 MW peak and the replacement of inefficient appliances for vulnerable persons. The Maltese government has also issued schemes aimed at encouraging ownership of electric vehicles, reducing the number of old motor vehicles on the road and thus reducing emissions.

DOMESTIC CLIMATE SECTOR

Domestic climate sector

8 Describe the main commercial aspects of the climate sector in your country, including any related government policies.

Photovoltaic (PV) technology is commercially established in Malta. Units are relatively light, and simple structures for government support are sufficient and easily obtainable. They are not unduly disadvantaged by economies of scale from a technical perspective. PV systems produce energy that is green and secure, and fit very well with two of the main objectives of the energy policy. Although still more expensive than conventional fossil-fuel-generated electricity, the gap is closing, especially when externalities are considered.

Solar energy has, so far, been the predominant viable renewable energy source in Malta and is likely to continue to be for the next decade. The objective for the period up to 2030 is to fully exploit Malta's solar energy potential by making use of all available space for the installation of photovoltaic (PV) systems, enabling it to reach its renewable energy targets. Policy measures to achieve this goal are already in place, the main one being the financial support for PV installations. Unlike other EU member states, Malta has continued to apply feed-in tariff schemes for small PV installations. Additionally, competitive processes are launched on a regular basis for the allocation of support for PV systems of at least 1 MW peak.

GENERAL GHG EMISSIONS REGULATION

Regulation of emissions

9 | Do any obligations for GHG emission limitation, reduction or removal apply to your country and private parties in your country? If so, describe the main obligations.

Obligations to reduce GHG emissions mainly arise out of the emissions trading system (ETS) regulations, the Industrial Emissions (Integrated Pollution Prevention and Control) Regulations (the IPPC Regulations), and the Effort Sharing Regulations, which commit Malta to a 19 per cent reduction In GHG emissions compared to 2005.

The ETS works by putting a limit on overall emissions from certain installations and aircraft, which limit is reduced each year. Within this limit, companies can buy and sell emission allowances as needed. This 'cap-and-trade' approach gives companies flexibility to cut their emissions in the most cost-effective way. The ETS covers certain stationary installations and aircraft operating with a valid licence granted by the civil aviation authorities of Malta, or aircraft that, although not licensed by the civil aviation authorities of Malta, have Malta identified as the being the state with the greatest attributed emissions from flights performed by that aircraft in the base year.

The IPPC Regulations are the main instrument regulating pollutant emissions from 'high-risk' industrial installations, such as energy plants and certain waste management activities. In terms of these regulations, installation operators are required to operate within the emission limit values set out in the permit for the particular activities carried out by the installation. They are also required to operate the installation in accordance with the best available techniques. Installation operators must monitor, record and report annual emissions to the competent authority in accordance with the conditions laid down in the permit.

GHG emission permits or approvals

10 | Are there any requirements for obtaining GHG emission permits or approvals? If so, describe the main requirements.

Operators of certain installations must obtain a permit, prior to commencement of operations, under both the emissions trading regulations and the IPPC Regulations. The operator must submit an application containing information about the operator and the installation activities, the raw materials to be used that are likely to lead to emissions of GHG gases, the sources of the emissions and any other information that the competent authority may require. To be granted a permit under the former regulations, the competent authority must be satisfied that the operator is capable of complying with the requirements of the regulations and the conditions of the permit.

The requirements for obtaining a permit under the IPPC Regulations are similar to those under the ETS. The operator must provide the competent authority with information on the operator, the installation and its activities, raw and auxiliary materials to be used, sources of emissions, and the proposed technology and techniques for preventing or, where not possible, reducing emissions. The operator may also be required to place a financial guarantee in favour of the competent authority to secure its obligations under the permit. The competent authority shall take into account the applicant's suitability to undertake the proposed activity, having regard to the operator's qualifications, experience and technical competence, and its financial capacity to comply with its obligations under the permit.

Oversight of GHG emissions

11 | How are GHG emissions monitored, reported and verified?

Under the ETS, installation and aircraft operators must submit a monitoring plan describing the measures by which annual emissions from the installation will be monitored and reported. The monitoring plan must be approved by the competent authority and will serve as the accepted methodology for monitoring in that installation. On an annual basis, the operator of the installation must submit verified emissions reports to the competent authority. The reports must first be verified by a competent, independent accredited verifier before being submitted to the competent authority. A verification report issued by the verifier must accompany the emissions report when this is submitted to the authority.

In terms of the regulations governing industrial emissions, operators must include in the permit application measures for monitoring emissions. The competent authority shall ensure that the permit conditions contain detailed monitoring requirements, including the methodology, frequency and evaluation procedure for monitoring emissions. At least once annually, the operator must provide the competent authority with information and results obtained from emission monitoring.

GHG EMISSION ALLOWANCES (OR SIMILAR EMISSION INSTRUMENTS)

Regime

12 | Is there a GHG emission allowance regime (or similar regime) in your country? How does it operate?

As a member of the EU, Malta has implemented the emission trading system (ETS), which regulates GHG emissions for certain stationary installations and aircraft. The ETS works by putting a limit on overall emissions from certain installations, which is reduced each year. Within this limit, companies can buy and sell emission allowances as needed.

To achieve the 2030 goals and the commitments undertaken in the Paris Agreement, the sectors covered by the ETS must reduce their emissions by 43 per cent compared to 2005 levels. This will require an annual decrease in emission allowances of 2.2 per cent for the period between 2021 and 2030.

Additionally, under the IPPC regime, installation operators are required to operate within the emission limit values set out in the permit for the particular activities carried out by the installation.

Registration

13 | Are there any GHG emission allowance registries in your country? How are they administered?

Directive 2003/87/EC, which establishes the scheme for greenhouse gas emission allowance trading within the EU, requires that all allowances be held in the Union registry. The registry system provides for the electronic recording of issuance of allowances and of all transactions involving allowances or units derived from Kyoto Protocol project-based mechanisms performed by operators participating in the EU Emissions Trading System. The registry system records the following elements:

- allowances and units that are issued to and held in installation or aircraft operator accounts;
- annual verified reported emissions for installations or aircraft operators;
- transfers of allowances and units into or out of accounts and surrendering, cancellation and replacement of allowances; and
- annual compliance statements of emissions.

In Malta, the role of national registry administrator is held by the Malta Resources Authority. Accounts of aircraft and operators of installations in Malta are opened and administered by the national registry administrator.

Obtaining, possessing and using GHG emission allowances

14 What are the requirements for obtaining GHG emission allowances? How are allowances held, cancelled, surrendered and transferred? Can rights in favour of third parties (eg, a pledge) be created on allowances?

Operators of installations and aircraft subject to the compliance requirements of Directive 2003/87/EC must have a holding account opened in the Union registry. The free allowances to which an operator is eligible for a particular year are issued into the operator's account by the registry administrator.

Operators must account for reported emissions by surrendering an amount of allowances equivalent to the quantity of actual emissions reported in the previous year's annual emission report. This function is carried out through the registry account.

An operator holding in their account a quantity of allowances that is less than the actual emissions to be covered by surrendered allowances must acquire additional allowances or use units derived from Kyoto Protocol project-based mechanisms. An operator with a quantity of allowances greater than the amount of emissions to be covered by surrendered allowances can either hold on to excess allowances or sell them. An operator may also borrow allowances from the subsequent year to cover any shortfall in allowances during a particular year; however, no borrowing of allowances can take place between trading periods.

The administrator shall cancel allowances at any time at the request of an operator of an installation holding those allowances.

TRADING OF GHG EMISSION ALLOWANCES (OR SIMILAR EMISSION INSTRUMENTS)

Emission allowances trading

15 What GHG emission trading systems or schemes are applied in your country?

In Malta, the EU Emissions Trading System is applied and covers both stationary installations and aircraft.

Trading agreements

16 Are any standard agreements on GHG emissions trading used in your country? If so, describe their main features and provisions.

No standard agreements on GHG emissions trading are used in Malta.

SECTORAL REGULATION

Energy sector

17 Give details of (non-renewable) energy production and consumption in your country. Describe any regulations on GHG emissions. Describe any obligations on the state and private persons for minimising energy consumption and improving energy efficiency. Describe the main features of any scheme for registration of energy savings and for trade of related accounting units or credits.

As reported in the NECP, the provisional average final energy consumption for the period 2016–2018 amounted to 622.7 ktoe. The National Statistics Office recently reported that during 2020, the electricity supply in Malta comprised net generation from power plants (73.6 per cent), supply from net imports (16.7 per cent) and renewable sources (9.7 per cent). In 2020, the gross production consisting of the electricity supplied from power plants and from renewables amounted to 2,143.1 GWh, with the remaining 419.8 GWh imported through the interconnector.

The main pieces of legislation governing GHG emissions are the ETS Regulations, the IPPC Regulations and the EU's Effort Sharing Regulation, all of which contain measures to limit and reduce GHG emissions. In addition, the Energy Efficiency Regulations provide a framework for the promotion of energy efficiency and lay down rules designed to remove barriers in the energy market and overcome market failures that impede efficiency in the supply and use of energy. In terms of energy efficiency, national policy emphasises the importance of energy efficiency in buildings, which is regulated by the Energy Performance of Buildings Regulations (Subsidiary Legislation 623.01). These Regulations promote the improvement of the energy performance of buildings within the territory of Malta, taking into account outdoor climatic and local conditions, as well as indoor climate requirements and cost-effectiveness.

Other sectors

18 Describe, in general terms, any regulation on GHG emissions in connection with other sectors.

There is no sector-specific regulation on GHG emissions for sectors other than those covered by the ETS and the IPPC regime.

RENEWABLE ENERGY AND CARBON CAPTURE

Renewable energy consumption, policy and general regulation

19 Give details of the production and consumption of renewable energy in your country. What is the policy on renewable energy? Describe any obligations on the state and private parties for renewable energy production or use. Describe the main provisions of any scheme for registration of renewable energy production and use and for trade of related accounting units or credits.

Malta had committed to reach a target share of energy from renewable sources of 10.0 per cent by 2020 and is now committed to a reduction of 11.5 per cent by 2030 in gross final consumption of energy. Renewable electricity production in Malta reached around 8.0 per cent of the total by 2019, falling short of the 2020 renewable energy target, which was eventually achieved through the purchase of renewable energy credits.

The production of renewable energy in Malta, as a share of electricity supply, has increased significantly over recent years. While it stood at 4.4 per cent in 2015, it rose to 8.2 per cent by 2019, almost doubling. This was supported by the adoption of solar energy, which accounted for more than 97.0 per cent of total renewable energy production in Malta in 2019. Solar energy has, so far, been the predominant viable renewable energy source in Malta and is likely to continue to be for the next decade. Other renewable technologies are, however, being explored as potential sources of electricity in the period between 2030 and 2050.

The objective for the period up to 2030 is to fully exploit Malta's solar energy potential by making use of all available space for the installation of photovoltaic (PV) systems. This will enable Malta to reach the 11.5 per cent renewable energy share (RES) target in gross final energy consumption by 2030. Policy measures to achieve this goal are already in place, the main one being the financial support for PV installations. Unlike other EU member states, Malta has continued to apply feed-in tariff schemes for small PV installations. Additionally, competitive

processes are launched on a regular basis for the allocation of support for PV systems of at least 1 MW peak. These ongoing schemes have ensured that Malta remained on track towards the achievement of its RES target for 2030.

Wind energy

20 | Describe, in general terms, any regulation of wind energy.

Malta has no specific regulation on wind energy. However, offshore wind technology is considered in the LCDS, which sets out a roadmap to 2050.

Solar energy

21 | Describe, in general terms, any regulation of solar energy.

Solar energy is regulated through the Promotion of Energy from Renewable Sources Regulations (Subsidiary Legislation 545.35), which require support schemes to be put in place to incentivise renewable energy generators. The success of PV deployment in Malta has largely been due to the incentives offered through various schemes, such as feed-in tariff schemes for small PV installations, and financial grants for solar water heaters. Additionally, competitive processes are launched on a regular basis for the allocation of support for PV systems of at least 1 MW peak.

The application of feed-in-tariffs is regulated by the Feed-In Tariff Scheme (Electricity Generated from Solar Photovoltaic Installations Regulations (Subsidiary Legislation 545.27), while the competitive processes for the allocation of support for PV systems are regulated by the Competitive Bidding Rules for Renewable Sources of Energy Installations Regulations (Subsidiary Legislation 545.31).

The installation of a PV system may require both a development planning permit from the Planning Authority and a generating licence from the Regulator for Energy and Water Services.

Hydropower, geothermal, wave and tidal energy

22 | Describe, in general terms, any regulation of hydropower, geothermal, wave or tidal energy.

Malta does not specifically regulate hydropower, geothermal, wave and tidal energy.

Waste-to-energy

23 | Describe, in general terms, any regulation of production of energy based on waste.

At present there is no specific regulation on the production of energy based on waste; however, the government is currently commissioning a waste-to-energy plant to enable increased diversion of residual waste from landfill.

Biofuels and biomass

24 | Describe, in general terms, any regulation of biofuel for transport uses and any regulation of biomass for generation of heat and power.

Biofuel for transport is regulated through both the Promotion of Energy from Renewable Sources Regulations (Subsidiary Legislation 545.35), and Biofuels, Bioliquids and Biomass Fuels (Sustainability Criteria) Regulations (Subsidiary Legislation 545.37). Additionally, the Lifecycle Greenhouse Gas Emissions from Fuels Regulations (Subsidiary Legislation 423.48) apply specifically to petrol, diesel and biofuels used in road transport.

Malta is committed to achieving a share of renewable energy within the final consumption of energy in the transport sector of at least 14 per cent by 2030. This target is expected to be achieved through means of a legal obligation on importers of petrol and diesel to blend an increasing share of biofuels in their mix.

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Carbon capture and storage

25 | Describe, in general terms, any policy on and regulation of carbon capture and storage.

Malta has no specific regulation on carbon capture and storage. However, studies on carbon capture are contemplated in the LCDS.

CLIMATE MATTERS IN TRANSACTIONS

Climate matters in M&A transactions

26 | What are the main climate matters and regulations to consider in M&A transactions and other transactions?

Climate matters are not typically considered in M&A transactions.

UPDATE AND TRENDS

Emerging trends

27 | Are there any emerging trends or hot topics that may affect climate regulation in your country in the foreseeable future?

As an EU member state, Malta is committed to becoming climate neutral by 2050. To this end, in June 2021, Malta launched for public consultation its Low Carbon Development Strategy (LCDS), which identifies the most cost-effective pathways to mitigating emissions and increasing renewable energy generation.

Malta's objective for the period up to 2030 is to fully exploit Malta's solar energy potential by making use of all available space for the installation of photovoltaic systems. Thereafter, in the period up to 2050, other renewable technologies will be explored as potential sources of electricity.

In the transport sector, the LCDS explores a number of measures to encourage a shift away from private car use in Malta and to support a quick transition to electric vehicles. To this end, the LCDS considers various measures, including the enhancement of the financial grant scheme currently in place to incentivise the purchase of electric vehicles and the electrification of scheduled public transport buses.

Netherlands

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MAIN CLIMATE REGULATIONS, POLICIES AND AUTHORITIES

International agreements

1 | Do any international agreements or regulations on climate matters apply in your country?

The United Nations Framework Convention on Climate Change, the Kyoto Protocol and the Paris Agreement are all applicable in the Netherlands. Most international agreements are directly binding in the Dutch legal system under the Dutch constitution. The Paris Agreement was signed by the European Union, which means that the Netherlands is also bound by the Agreement through EU membership.

The European Union has adopted regulations on climate matters (eg, Directive 2003/87/EC on the allowance of trading with greenhouse gas emissions). In December 2019, it presented the European Green Deal, the goal of which is to make the European Union the first climate-neutral continent by 2050. The goals presented by the European Union are goals for the European Union as a whole, so they must be applied by each member state. The member states must draw up plans for this, which are examined by the European Commission. To reach the goal of climate neutrality, on 14 July 2021 the European Commission adopted a set of proposals to make the European Union's climate, energy, transport and taxation policies fit for reducing net greenhouse gas emissions by at least 55 per cent by 2030, compared to 1990 levels. The package of proposals aims to make the EU Fit for 55 and build upon policies and legislation the European Union has already put in place.

International regulations and national regulatory policies

2 | How are the regulatory policies of your country affected by international regulations on climate matters?

As most international agreements are directly binding in the Dutch legal system, there is generally no need to implement these agreements in national law. Because most international agreements do not contain specific measures that must be taken to achieve the climate goals, the Dutch legislator is still required to adopt new legislation to achieve those climate goals.

The European Union distinguishes two types of climate rules: regulations and directives. A regulation is directly binding in all EU member states, meaning, among other things, that there is no influence from national regulatory policy. Directives, on the other hand, must be transposed into national law.

Main national regulatory policies

3 | Outline recent government policy on climate matters.

The Dutch government aims to reduce Dutch greenhouse gas emissions by 49 per cent by 2030 and by 95 per cent by 2050 (compared to 1990 levels). On 20 December 2019, in *Urgenda*, the Supreme Court of the Netherlands ruled that the Court of Appeal was authorised to decide that the Dutch state is obliged to reduce greenhouse gas emissions in the Netherlands by 25 per cent (compared to 1990 levels) by the end of 2020. The Dutch government has put together a package of measures to comply with the ruling in *Urgenda*.

The Climate Agreement is an agreement that was concluded between multiple organisations and companies in the Netherlands. In the Agreement, the government has, for example, introduced a CO_2 tax for large companies from 2021 and increases to natural gas tax over the following six years.

Main national legislation

4 | Identify the main national laws and regulations on climate matters.

The Climate Act, in effect as of 2020, determines by what percentage the Netherlands must reduce CO_2 emissions and intends to provide citizens and companies with certainty regarding climate goals. The policy and measures to achieve these climate goals are laid down in the Climate Plan, the National Energy and Climate Plan and the Climate Agreement.

The Climate Plan is drawn up for a period of 10 years and is adjusted every five years based on current insights. The Climate Plan must, for example, entail measures taken to stimulate the extension of renewable energy and saving on primary energy consumption, as well as a review of the most recent scientific developments in the research of recent climate change and the development in the technological possibilities to reduce the emission of greenhouse gases.

The Climate Agreement is an agreement between the government, organisations and companies in the Netherlands to combat climate change. The energy, industrial and agricultural sectors are participants in this agreement.

An NECP must be drawn up by all EU member states to demonstrate how they meet and contribute to the European climate goals (to achieve a 32 per cent share of renewable energy by 2030).

National regulatory authorities

5 | Identify the national regulatory authorities responsible for climate regulation and its implementation and administration. Outline their areas of competence.

The Ministry of Economic Affairs and Climate is primarily responsible for rules and regulations relating to climate. The Ministry, as a governing body, has limited legal power to adopt national climate regulations itself. The Minister of Economic Affairs and Climate can only present a bill on behalf of the government, which must then be approved by a majority of Parliament, provided that the bill can be amended by members of the Parliament.

The Minister is competent to adopt certain rules and regulations provided that this power has been rewarded by statute. Furthermore,

local governments must take into account climate rules and regulations when acting within their competencies.

GENERAL NATIONAL CLIMATE MATTERS

National emissions and limits

6 What are the main sources of emissions of greenhouse gases (GHG) (or other regulated emissions) in your country and the quantities of emissions from those sources? Describe any limitation or reduction obligations. Do they apply to private parties in your country?

Data on GHG emissions in Netherlands can be found in the Pollutant Release and Transfer Register. The table below shows GHG emissions in metric tons of CO_2 equivalent for the years 1990, 2018 and 2019 (last updated January 2021).

	1990	2018	2019
Carbon dioxide	162.7	159.5	153.6
Methane	31.8	17.3	17.2
Nitrous oxide	17.5	8.0	7.9
Fluorinated greenhouse gases	8.5	2.0	2.0
Total	220.5	186.8	180.7

Article 2 of the Climate Act determines the extent to which the Netherlands must reduce CO_2 emissions: 95 per cent reduction by 2050 and 49 per cent reduction by 2030 (compared to 1990 levels). These reduction obligations, and many other obligations under international and EU law, are binding on the Dutch state but do not directly apply to private parties in the Netherlands. However, private parties must comply with Dutch rules and regulations to achieve these reduction goals.

National GHG emission projects

7 Describe any major GHG emission reduction projects implemented or to be implemented in your country. Describe any similar projects in other countries involving the participation of government authorities or private parties from your country.

As agreed in the Climate Agreement, a CO_2 tax for large companies was introduced in 2021, together with increases to natural gas tax over the following six years. The Bill for the CO_2 Tax Industry Act amends the Environmental Taxes Act and the Environmental Management Act. The CO_2 tax is a surcharge that companies who own either an industrial installation that falls under the EU Emissions Trading System, a waste incineration plant or an installation that emits large quantities of nitrous oxide must pay when such an installation emits more than the exempt amount of greenhouse gas. Installations that emit heat or electricity are exempt from the CO_2 tax. The CO_2 tax will mainly concern GHG emissions from and for industrial production and waste incineration. The Bill is designed with an aim of achieving the reduction target for industry as agreed in the Climate Agreement, while affecting neighbouring countries as little as possible. The national tax is connected in various places with the EU Emissions Trading System based on Directive 2003/87/EC.

Furthermore, two major offshore carbon capture and storage projects are planned: Athos and Porthos. The goal of these projects is to transport large amounts of CO_2 and bury them in the empty gas fields under the North Sea.

DOMESTIC CLIMATE SECTOR

Domestic climate sector

8 Describe the main commercial aspects of the climate sector in your country, including any related government policies.

On 28 June 2019, the government presented the Climate Agreement, which contains over 600 agreements to reduce greenhouse gas emissions and was concluded between the government and private parties. The Agreement stimulates participation in sustainable energy projects. The government has made several commitments to make accessible and responsible financing options broadly available to implement sustainability measures.

GENERAL GHG EMISSIONS REGULATION

Regulation of emissions

9 Do any obligations for GHG emission limitation, reduction or removal apply to your country and private parties in your country? If so, describe the main obligations.

The Climate Act provides that the Netherlands must reduce CO_2 emissions by 49 per cent by 2030 and by 95 per cent by 2050 (compared to 1990 levels). These reduction obligations are binding on the Dutch state but do not apply directly to private parties in the Netherlands. The state elaborates what measures it will implement to achieve these goals, which will be binding on private parties.

Since 2021, GHG emissions have been regulated by the Bill for the CO_2 Tax Industry Act. The CO_2 tax mainly concerns GHG emissions from and for industrial production and waste incineration. The Bill is designed with the aim of achieving the reduction target for industry as agreed in the Climate Agreement, while affecting neighbouring countries as little as possible. The national tax is connected in various places with the EU Emissions Trading System based on Directive 2003/87/EC.

Directive 2003/87/EC on GHG emission allowance trading plays an important role in the removal of GHG emissions in the European Union, including in the Netherlands. A reduction in CO_2 emissions is achieved when the amount of available GHG emission allowance is reduced at the European level. The Directive was implemented by Chapter 16 of the Environmental Act.

The directly applicable Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer aims to phase out the use of this type of GHG emission. With regard to fluorinated greenhouse gas, Regulation (EU) No. 517/2014 aims to phase out the production, consumption and usage of those GHG emissions.

GHG emission permits or approvals

10 Are there any requirements for obtaining GHG emission permits or approvals? If so, describe the main requirements.

Companies that are obliged to participate in the EU Emissions Trading System must hold an emission permit as from the moment of the first emission onwards. An important condition for obtaining the permit is the drawing up of a monitoring plan that meets all the requirements that follow from Directive 2003/87/EC. The monitoring plan must provide, among other things, information on the company and the methods of measuring GHG. The specific requirements for obtaining a GHG emission permit can be found in the national Regulation on Monitoring Emission Allowance Trading.

Oversight of GHG emissions

11 | How are GHG emissions monitored, reported and verified?

The monitoring and reporting of GHG emissions is regulated in Commission Regulation (EU) No. 601/2012. The Dutch Regulation on Monitoring Emission Allowance Trading contains additional rules regarding this process. Companies must explain in their monitoring plan how they will meet the requirements of the rules and regulations regarding GHG emissions and the manner in which they will determine the amount of GHG they emit.

Emissions are mostly determined by calculations, for example, based on the amount and characteristics of the fuel or materials used. An alternative option for companies is to measure their emissions directly at the points of emission (eg, pipes). All the details on GHG emissions are drawn up in an emissions report by the company, which is submitted to the board of the Dutch competent authority, the Dutch Emissions Authority (NEA). The NEA assesses and determines if the verified emissions report is in compliance with the applicable rules and regulations.

GHG EMISSION ALLOWANCES (OR SIMILAR EMISSION INSTRUMENTS)

Regime

12 | Is there a GHG emission allowance regime (or similar regime) in your country? How does it operate?

Under the EU Emissions Trading System (EU ETS) (Directive 2003/87/EC), each year emission rights are allocated free of cost to companies that participate in the EU ETS and are, thus, in the possession of a GHG permission permit. Moreover, there are emissions rights, which are sold on the market through auction.

The Dutch GHG emission allowances are auctioned at a joint European auction, which is conducted three times a week by the auction platform EEX. The auction is open to companies that meet the requirements of the auction platform (most of them are obliged to participate in emissions trading as well). Investors, banks and credit institutions can also act as bidders in joint European auctions.

Registration

13 | Are there any GHG emission allowance registries in your country? How are they administered?

The GHG emissions allowance is registered and administered at the EU level in the European Registry for GHG emission allowance trading (the CO_2 registry). This is an online system that gives an overview of the emission allowances possessed in the EU ETS. After logging in, users have access to their accounts and can transfer their emission allowances to other accounts through transactions.

An account representative enters an emissions figure in the CO_2 register. If the emissions figure matches the figures in the verified emissions report (which a company is obliged to draft and submit to the Dutch Emissions Authority (NEA) every year), an NEA officer approves the figure. After verification of the emissions figure, companies can determine the amount of emission allowances they must hand in.

Obtaining, possessing and using GHG emission allowances

14 | What are the requirements for obtaining GHG emission allowances? How are allowances held, cancelled, surrendered and transferred? Can rights in favour of third parties (eg, a pledge) be created on allowances?

GHG emission allowances can, under certain circumstances, be obtained by a company free of cost when it possesses a permit based on the rules in the EU ETS system. The allowances are held and surrendered through the European CO_2 registry.

GHG emission allowances can also be obtained at an auction. The Dutch GHG emission allowances are auctioned at joint European auctions, which are conducted three times a week by the auction platform EEX. The auction is open to companies that meet the requirements of the auction platform (most of them are obliged to participate in emissions trading as well). Investors, banks and credit institutions can also act as bidders. The day following the auction, the winning parties receive the emission allowances on their account in the CO_2 register.

Article 16.42 of the Environmental Act states that no rights in favour of third parties can be established on allowances. More particularly, it excludes the establishment of a right of pledge, right of usufruct or the seizure of emission allowances.

TRADING OF GHG EMISSION ALLOWANCES (OR SIMILAR EMISSION INSTRUMENTS)

Emission allowances trading

15 | What GHG emission trading systems or schemes are applied in your country?

The EU Emissions Trading System (EU ETS) applies in the Netherlands. It is a market instrument by which the European Union aims to reduce GHG emissions cost-effectively to achieve its international climate targets (see Directive 2003/87/EC). The EU ETS works according to the cap-and-trade principle, which means that the amount of available GHG emission allowances is established at a certain level (the cap), and, to the extent that this level is not exceeded, parties are free to trade their GHG emission rights, which takes place through transactions. Most companies participating in the EU ETS are annually awarded a quantity of emission allowances free of cost. When a company exceeds the amount of emission allowances it holds, it must purchase additional allowances through auctions or trade.

Trading agreements

16 | Are any standard agreements on GHG emissions trading used in your country? If so, describe their main features and provisions.

Emission allowances can be transferred by agreement. Several standard agreements are used. These agreements should be in line with paragraph 16.2.3 of the Environmental Management Act.

SECTORAL REGULATION

Energy sector

17 | Give details of (non-renewable) energy production and consumption in your country. Describe any regulations on GHG emissions. Describe any obligations on the state and private persons for minimising energy consumption and improving energy efficiency. Describe the main features of any scheme for registration of energy savings and for trade of related accounting units or credits.

Energy production by source	2018	2019
Natural gas	1.162 PJ (74.9%)	1007 PJ (70.6%)
Renewables	240 PJ (15.5%)	268 PJ (18.8%)
Oil	78 PJ (5%)	66 PJ (4.6%)
Nuclear	35 PJ (2.2%)	38 PJ (2.7%)
Other	36 PJ (2.3%)	47 PJ (3.3%)

Energy consumption by source	2018	2019
Natural gas	1.281 PJ (41%)	1346 PJ (44.0%)
Oil	1.166 PJ (38%)	1117 PJ (36.5%)
Coal	344 PJ (11%)	269 PJ (8.8%)
Renewables	199 PJ (6%)	232 PJ (7.6%)
Nuclear	35 PJ (1%)	38 PJ (1.2%)
Electricity (imported)	31 PJ (1%)	2 PJ (0.1%)
Other	43 PJ (1%)	54 PJ (1.8%)

Detailed energy saving laws, regulations and covenants apply to different stakeholders in the Netherlands, including rules regarding the energy efficiency of houses and other buildings.

In accordance with applicable environmental rules and regulations, measures must be taken if the measures can be earned back within five years.

More than 1,000 companies from 40 sectors were working on energy savings and CO_2 reduction by 2020 as a part of the covenant on multi-year agreements on energy efficiency.

Other sectors

18 | Describe, in general terms, any regulation on GHG emissions in connection with other sectors.

Among other more detailed rules and regulations on GHG emissions, the directly applicable Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer aims to phase out the use of this type of GHG emission. With regard to fluorinated greenhouse gas, Regulation (EU) No. 517/2014 aims to phase out the production, consumption and usage of those GHG emissions.

RENEWABLE ENERGY AND CARBON CAPTURE

Renewable energy consumption, policy and general regulation

19 | Give details of the production and consumption of renewable energy in your country. What is the policy on renewable energy? Describe any obligations on the state and private parties for renewable energy production or use. Describe the main provisions of any scheme for registration of renewable energy production and use and for trade of related accounting units or credits.

In 2020, electricity production from renewable sources increased by 40 per cent year on year. Slightly over one-quarter of Dutch electricity consumption last year came from domestic renewable sources. In 2020, total electricity production from renewable sources amounted to 31 billion kilowatt hours (kWh), up from 22 billion kWh in 2019. Wind turbines accounted for the largest share of renewable electricity generation, namely 45 per cent; biomass accounted for 29 per cent and solar power for 26 per cent.

The basic conditions for energy policy in the Netherlands are largely determined by European frameworks. The aim is that by 2020, 14 per cent of all energy produced will be generated from renewable sources, rising to 16 per cent by 2023. This is outlined in the Energy Agreement for Sustainable Growth, which the government concluded with 40 groups of interested parties, including employers, trade unions and environmental organisations.

The long-term objectives that must be implemented are detailed in the Energy Agenda. It describes the choices to be made and the steps that must be taken in the transition path towards 2050, the year by which, according to the European Green Deal, the European Union aims to be the first climate-neutral continent.

The production of renewable energy is stimulated by subsidies.

Wind energy

20 | Describe, in general terms, any regulation of wind energy.

The government aims to stimulate sustainable energy with the Stimulation of Sustainable Energy Production and Climate Transition (SDE++) subsidy, which has a total budget of €5 billion. This subsidy is the follow-up of the earlier Stimulation of Sustainable Energy Production (SDE+) scheme. An SDE++ subsidy compensates the difference between the cost price of the sustainable energy or the reduction in CO_2 emissions and the revenue (if any). This is referred to as the 'unprofitable component'. The SDE++ can only be requested by companies or non-profit organisations, whereas a wind energy project can only apply for the subsidy if the required permits for the wind farm have been granted.

The permits that are required for (the development and operation of) a wind farm are found in various rules and regulations and for which specific procedures apply; however, the competent authority may decide to coordinate all permitting and planning procedures, meaning that these procedures run parallel to each other.

In respect of the required permits, first, the construction of a wind farm must be permitted by the central government, the province or municipality in accordance with the Spatial Planning Act. An environmental permit, based on the Environmental Law (General Provisions) Act, is required to build wind turbines. Building wind turbines may have negative effects on the environment; therefore, the Environmental Management Act provides legislation to protect the environment. For example, in an environmental impact assessment, the effects of the wind farm on the environment and on nearby nature conservation areas are mapped out. Whether an environmental permit will be granted depends heavily on the outcome of the assessment.

The Council of State ruled on 30 June 2021 that an environmental impact assessment must be made for the general standards for noise, shadow and safety that apply for the construction and use of wind farms. The Dutch government will now have to make an environmental impact assessment, which will probably take a couple of years. Until then, these general standards in the Activities Decree and Activities Regulation may not be used for wind farms.

The Electricity Act regulates the production, transmission and supply of electricity. Before building a windmill, an initiator may also need a Natura 2000 permit or an exemption based on the Nature Conservation Act. If the wind farm has a negative effect on the protection of Natura 2000 areas, the project developer must draw up an appropriate assessment that identifies the effects, and it must take measures to mitigate the effects.

The right to operate an offshore wind farm is tendered. The tender procedure includes the issuance of – most of – the permits.

Solar energy

21 | Describe, in general terms, any regulation of solar energy.

In most cases, no permit is required for the installation of solar panels or solar collectors on, for example, a house or other building, provided that the placement thereof is in accordance with the applicable zoning plan.

This does not apply to the construction of an entire solar park. The solar park must be permitted by the central government, the province or municipality following the Spatial Planning Act. Furthermore, an environmental permit, based on the Environmental Law (General Provisions) Act, is required to build a solar park. Building a solar park may have negative effects on the environment; therefore, the Environmental Management Act provides legislation to protect the environment. For example, in an environmental impact assessment, the effects of the solar park on the environment and on nature are mapped out. Whether an environmental permit will be granted depends heavily on the outcome of the assessment.

The Electricity Act regulates the production, transmission and supply of electricity. Before building a solar park, an initiator may also need a Natura 2000 permit or an exemption based on the Nature Conservation Act. If the solar park has a negative effect on the protection of Natura 2000 areas, the project developer must draw up an appropriate assessment that identifies the effects, and it must take measures to mitigate the effects.

There is no national subsidy available for households when purchasing solar panels, as they have shown to be so profitable that subsidies are no longer required (it is, however, stimulated by fiscal law). Until 1 January 2023, households and small businesses can give self-produced electricity back to the electricity grid (netting). From 2023, the netting scheme will be gradually phased out until 2031.

People who generate sustainable electricity together with others cooperatively can receive a discount on energy taxes. For companies, an SDE++ subsidy is in place; the government aims to stimulate sustainable energy with the SDE++ subsidy.

Hydropower, geothermal, wave and tidal energy

22 | Describe, in general terms, any regulation of hydropower, geothermal, wave or tidal energy.

Hydropower energy

For a hydroelectric power station, a water permit is required. The water permit is based on the Water Act, and conditions may be included in the permit.

Hydroelectric power stations are subject to the Policy Rule on Water Permits for Hydropower Plants in National Waters. For wave or tidal energy, a water permit, based on the Water Act, is required.

The main focus of the requirements for a water permit regards the protection of fish.

Geothermal energy

According to the Mining Act, an initiator requires an exploration permit before the first drilling is carried out. If the drilling proves to be sufficiently productive, the exploration licence can be converted into a production licence. One requirement for a production permit is that there is a substantial chance that the minerals within the area in relation to the permit are economically recoverable. A production plan is also required. An amendment to the Mining Act is currently being discussed in Parliament. The amendment introduces a renewed permit system, which pays more attention to the uncertain start-up phase of geothermal energy development. Municipalities and provinces gain more influence on various aspects of a geothermal energy project, including safety and environmental measures and information provision to the general public.

The Mining Act is further developed in the Mining Decree and the Mining Regulation. In addition, environmental permits, based on the Environmental Law (General Provisions) Act, are required.

The government stimulates all forms of sustainable energy with an SDE++ subsidy, which can only be applied for by companies. The government supports companies that drill for geothermal energy through a national Regulation of Subsidies (see paragraph 4.3); if drilling proves to be unsuccessful, the company may qualify for compensation.

Waste-to-energy

23 | Describe, in general terms, any regulation of production of energy based on waste.

Among other environmental permits, waste incinerators must adhere to the rules of waste policy, which are mainly focused on limiting the environmental damage caused by the processing of waste into energy. The Environmental Management Activities Decree regulates the emissions from a combustion plant for the incineration of waste (section 5.1.2).

Biofuels and biomass

24 | Describe, in general terms, any regulation of biofuel for transport uses and any regulation of biomass for generation of heat and power.

An environmental permit, based on the Environmental Law (General Provisions) Act, is required to build a biofuel or biomass plant. Building a plant may have negative effects on the environment; therefore, the Environmental Management Act provides legislation to protect the environment. For example, in an environmental impact assessment, the effects of the plant on the environment and on nature are mapped out. Whether an environmental permit will be granted depends heavily on the outcome of the assessment.

The Electricity Act regulates the production, transmission and supply of electricity. Before building a plant, a party may also need a Natura 2000 permit or an exemption based on the Nature Conservation Act. If the plant has a negative effect on the protection of Natura 2000 areas, the project developer must draw up an appropriate assessment that identifies the effects, and it must take measures to mitigate the effects.

For companies, an SDE++ subsidy is in place for low-carbon production of renewable fuels for road and water transport. Companies can apply for a subsidy for the production of bioethanol from biomass, bio-LNG from mono-manure fermentation bio-LNG from all-purpose fermentation and diesel and petrol substitutes from pyrolysis oil based on biomass.

Carbon capture and storage

25 | Describe, in general terms, any policy on and regulation of carbon capture and storage.

There are currently no active carbon capture and storage projects in the Netherlands; however, two large projects (Athos and Porthos) are planned. Both are offshore.

The most important rules are laid down in mining rules and regulations, as well as environmental law and nature protection law. On the European level the most important rules are to be found within Directive 2009/31/EC on the geological storage of carbon dioxide.

CLIMATE MATTERS IN TRANSACTIONS

Climate matters in M&A transactions

26 | What are the main climate matters and regulations to consider in M&A transactions and other transactions?

The production of energy by biomass or biofuel is becoming more politically sensitive, as not all stakeholders consider it an improvement for climate change.

Owing to the earthquakes from the Groningen gas field, the production of gas from other smaller onshore gas fields is monitored intensively by local governments and inhabitants, although the Judicial Department of the Council of State has stated multiple times that the Groningen field cannot be compared with other smaller gas fields.

Onshore wind farms, especially larger ones, are nowadays often confronted with resistance from inhabitants.

With regard to geothermal energy, practice and regulations are developing quickly.

UPDATE AND TRENDS

Emerging trends

27 | Are there any emerging trends or hot topics that may affect climate regulation in your country in the foreseeable future?

National level

The government must take additional measures (and perhaps adopt additional rules and regulations) to comply with the ruling in the *Urgenda* case and international treaties. On 20 December 2019, the Supreme Court ruled in *Urgenda* that the Court of Appeal was competent to decide that the state must reduce greenhouse gas emissions in the Netherlands by 25 per cent (compared to 1990 levels) by the end of 2020.

A bill that introduces a minimum CO_2 price to companies that produce electricity, falling under the EU Emissions Trading System (EU ETS), is to be approved by the Senate. The aim of the minimum CO_2 price is to encourage companies that produce electricity to a greater extent to take into account the consequences of CO_2 emissions for the climate and the harmful consequences for people and the environment in their choices. A minimum CO_2 price for electricity producers offers long-term certainty about the minimum amount of CO_2 costs that they have to pay, so that they can include this in their investment decisions. The minimum CO_2 price consists of a combination of the CO_2 price resulting from the EU ETS and a national tax.

The district court of The Hague has ordered Royal Dutch Shell to cut its CO_2 emissions by 45 per cent by 2030 compared to 2019 levels, also stating that the Shell group is responsible for its own CO_2 emissions and those of its suppliers. The case is considered a landmark case as the *Shell* verdict could impact other industrial giants too and cause a wave of climate litigation.

European level

Another emerging trend that may affect climate rules and regulations in the Netherlands is the European Green Deal. The European Union aims to be the first climate-neutral continent by 2050 and is taking several measures to achieve this goal. For example, the European Climate Law enshrines the target of climate neutrality by 2050 in EU law, and the European Climate Pact involves citizens and sections of society in the fight against climate change. The European Climate Law was presented in March 2020. At the time of writing, the European Climate Pact has not been launched; it is expected to be launched in the final quarter of 2020.

On 17 September 2020, the European Climate Law was amended by the European Commission; an emissions reduction target of at least 55 per cent in 2030 was added. On 8 October 2020, the European Parliament proposed that the European Union's specific climate target for 2030 should be a 60 per cent reduction in emissions compared to 1990 and has adopted further amendments to the proposal. The matter was referred back to the committee responsible for inter-institutional negotiations.

On 14 July 2021, the European Commission proposed the Fit for 55 package. The proposals include the reform the EU Emissions Trading System by lowering the overall emission cap even further and increasing its annual rate of reduction. The Commission is also proposing to phase out free emission allowances for aviation and a separate new emissions trading system is set up for fuel distribution for road transport and buildings. The Renewable Energy Directive will set an increased target to produce 40 per cent of our energy from renewable sources by 2030. The ReFuelEU Aviation Initiative will oblige fuel suppliers to blend increasing levels of sustainable aviation fuels in jet fuel taken onboard at EU airports, including synthetic low carbon fuels, known as e-fuels. Similarly, the FuelEU Maritime Initiative will stimulate the uptake of sustainable maritime fuels and zero-emission technologies by setting a maximum limit on the greenhouse gas content of energy used by ships calling at European ports. Furthermore, a new Carbon Border Adjustment Mechanism will put a carbon price on imports of a targeted selection of products to ensure that ambitious climate action in Europe does not lead to 'carbon leakage'. This will ensure that European emission reductions contribute to a global emissions decline, instead of pushing carbon-intensive production outside Europe. It also aims to encourage industry outside the EU and our international partners to take steps in the same direction.

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MAIN CLIMATE REGULATIONS, POLICIES AND AUTHORITIES

International agreements

1 | Do any international agreements or regulations on climate matters apply in your country?

The United States is a party to the Paris Agreement. The United States signed the Paris Agreement in April 2016 and later ratified it, committing, alongside nearly 200 other countries, to limit global warming to 1.5 °C above pre-industrial levels. The United States also submitted an initial commitment to reduce greenhouse gas (GHG) emissions to 26–28 per cent below 2005 levels by 2025 as its first 'Intended Nationally Determined Contribution' (NDC) under the Paris Agreement. In June 2017, the Trump administration announced that the United States would pull out of the Paris Agreement, and the United States did briefly withdraw from the Paris Agreement on 4 November 2020. However, following the election of President Joe Biden, the United States announced that it would re-join the Paris Agreement. President Biden used executive authority to re-enter the Agreement, which took effect on 19 February 2021. In April 2021, the United States submitted a new NDC, committing to reduce economy-wide greenhouse gas (GHG) emissions by 50–52 per cent below 2005 levels in 2030.

The United States is also a party to the Vienna Convention for the Protection of the Ozone Layer and a protocol to that treaty, the Montreal Protocol on Substances that Deplete the Ozone Layer, since its finalisation in 1987. Under the Montreal Protocol and Title VI of the US Clean Air Act (CAA), some ozone-depleting substances (ODS), such as chlorofluorocarbons, have now been phased out except for a small quantity for uses agreed upon as 'essential'. Hydrochlorofluorocarbons (HCFCs) are currently being phased down through incremental decreases in consumption and production, with a complete phase-out by 2030. On 15 October 2016, at the 28th Meeting of the Parties in Kigali, the parties agreed to amend the Montreal Protocol to expand its scope to include certain hydrofluorocarbons (HFCs). However, the United States has not yet ratified the agreement. On 27 January 2021, President Biden announced in an executive order to send the Kigali Amendment to the Senate for its advice and consent to US ratification. On 4 May 2022, the Senate Foreign Relations Committee voted to advance the Kigali Amendment to the full Senate for ratification. That process remains pending.

The Environmental Protection Agency (EPA) and the Federal Aviation Administration (FAA) traditionally have worked with the International Civil Aviation Organization (ICAO) to establish aircraft emissions standards. The United States participates in the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA), to which the United States is committed under Annex 16, Volume IV of the Convention on International Civil Aviation, more commonly known as the Chicago Convention. Under CORSIA, all ICAO member states whose aircraft operators undertake international flights must develop a monitoring, reporting and verification system for CO_2 emissions from international flights subject to CORSIA. CORSIA eventually requires offsetting new emissions (above the baseline year of 2019) from covered international flights beginning in 2024, with a pilot phase from 2021–2023. In January 2021, EPA finalised CAA emission standards with domestic limits that mirror the ICAO's standards (86 Fed Reg 2,136 (11 January 2021)). EPA explained that aligning domestic standards with international standards would bring 'substantial benefits for future international cooperation' on aircraft emissions, which the agency deemed 'key for achieving worldwide emission reductions' (86 Fed Reg 2,144–45).

On 11 November 2014, the United States struck a bilateral agreement with China under which both nations seek to significantly reduce GHG emissions. On 17 April 2021, the Special Envoys from the United States and China released a joint statement after they met to discuss the climate crisis. The US-China Joint Statement Addressing the Climate Crisis detailed how the two countries are committed to cooperating and in multilateral processes. The US-China relationship, however, is in a constant state of flux and as of this writing China announced it would cease cooperation with the United States on climate change, though the precise implications of that statement remain unclear.

In June 2016, the United States, Mexico and Canada announced a joint goal of achieving 50 per cent 'clean power' generation across all three countries and reducing methane emissions from the oil and gas sector by 40 per cent to 45 per cent by 2025. On 23 February 2021, the Biden administration released a statement – the Roadmap for a Renewed US-Canada Partnership – in which the Biden administration and Canadian Prime Minister Trudeau set forth goals to accelerate climate ambitions. On 10 June 2022, the Biden administration released a joint statement on United States, Mexico and Canada cooperation, reaffirming the collective commitment to take action to address the climate crisis.

International regulations and national regulatory policies

2 | How are the regulatory policies of your country affected by international regulations on climate matters?

Although the United States lacks a binding comprehensive policy to regulate GHG emissions at the national level, the Biden administration has expressed its alignment with the Paris Agreement and committed to achieving a 50–52 per cent reduction in GHG emissions by 2030 and reaching net-zero emissions by 2050. In January 2021, President Biden signed Executive Order 14008 on Tackling the Climate Crisis at Home and Abroad, which reaffirmed US commitment to a wide range of international groups and treaties addressing the climate crisis. These executive actions are currently leading to both regulatory changes and new legislative proposals aimed at further regulation of GHG emissions in the United States as well as the creation of incentives for voluntary GHG emissions reductions and carbon sequestration. As discussed further below, additional regulation and legislation are focused on high-potency GHG emissions, transportation, and the energy sector in the short term, while incentive programmes are generally focused on the transportation

sector, renewable energy and carbon sequestration. Separately, financial regulators in the United States are considering additional regulations related to GHG risks and disclosures and may take into account parallel regulatory processes in the EU and elsewhere as they develop new US standards.

Main national regulatory policies

3 | Outline recent government policy on climate matters.

Within hours of his inauguration on 20 January 2021, President Biden acted to bring the United States back into the Paris Agreement and signed Executive Order 13990 Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis. Among other things, that order requires a review of actions taken under the prior Trump administration. Several states challenged Order 13990, including provisions aimed at reinstating use of the 'social cost of carbon' (SCC) metrics in calculating the costs and benefits of federal agency decisions. Executive Order 13990 was challenged, and on 26 May 2022, the Fifth Circuit Court of Appeals issued an order allowing federal agencies to continue using SCC metrics when acting within their authority, as described by the order.

One week after gaining office, the Biden administration hosted 'climate day' at the White House, where President Biden described a 'government-wide' approach and focus on climate change issues and signed Executive Order 14008, Tackling the Climate Crisis at Home and Abroad. Aspects of Executive Order 14008 also were challenged by Louisiana and other states. In June 2021, the US District Court for the Western District of Louisiana concluded (since appealed to the Fifth Circuit) that the Biden Administration lacks the authority to temporarily pause issuing new oil and natural gas leases for offshore and public lands, and such leasing has now resumed. But despite these challenges to Biden Administration executive orders, many remain in effect and continue to guide the administration's aggressive actions on climate change.

President Biden has taken other actions on climate change, such as assembling a team at the White House and at EPA with deep experience of climate change and GHG policy. In May 2021, President Biden issued an Executive Order on Climate-Related Financial Risk, which called for the development of a US government-wide climate risk strategy, published in October 2021. In addition to setting a 2030 GHG emissions reduction target under the Paris Agreement, President Biden has announced the objective of achieving net-zero GHG emissions for the United States by 2050, both of which are driving additional legislative proposals and regulatory actions under the Biden administration.

In the absence of national legislation specifically regulating GHG emissions, federal agencies have historically implemented climate policy under pre-existing regulatory authority, primarily by promulgating regulations under the CAA. Under the CAA and parallel state authorities to regulate emissions, individual US states and federal regulatory agencies have taken numerous sector-based actions. For example, EPA has promulgated regulations aimed at GHG reductions from various larger sources of GHG emissions that include: motor vehicles and other mobile sources (such as heavy-duty vehicles, aircraft, and locomotives); large stationary sources under the Prevention of Significant Deterioration (PSD) and Title V operating permit programmes; methane emissions from the oil and gas sector and certain solid waste landfills; high-potency GHGs; and other sectors or emissions sources.

In recent years, EPA began to regulate HFCs through two CAA Title VI programmes: the refrigerant management programme under section 608 of the CAA and the Significant New Alternatives Policy (SNAP) programme under section 612 of the CAA. The refrigerant management programme was extended to HFCs pursuant to a 2016 rule by EPA. Since that time, SNAP rules have seen various permutations and challenges, ultimately resulting in the vacature of some requirements. Several states promulgated replacement regulations in light of these developments, with California leading the charge to replace or bolster SNAP rules and impose even more stringent requirements.

In December 2020, Congress passed the American Innovation and Manufacturing Act (AIM Act), a law that impacts the regulation of HFCs in the United States in three significant ways:

- requiring EPA to promulgate a rule by September 2021 initiating an incremental phasedown on the production and import of HFCs by 85 per cent over the next 15 years;
- authorising EPA to promulgate new refrigerant management and leak repair regulations for HFCs; and
- authorising EPA to promulgate new technology transition regulations that restrict the use of HFCs in various applications to potentially replace and expand the vacated SNAP rules.

In May 2021, EPA published its first rule pursuant to the AIM Act to begin the phasedown of the manufacture and import of HFCs in 2022 through an allowance-based trading programme. EPA has received petitions from various environmental groups, states and industry groups to promulgate refrigerant management and technology transition rules under the AIM Act. The agency granted some of these petitions and is currently reviewing others. EPA is expecting to propose a technology transition rule in the coming months to address the issues raised by the petitions it granted, and to finalise a rule by the AIM Act deadline of October 2023.

Main national legislation

4 | Identify the main national laws and regulations on climate matters.

In November 2021, Congress passed a trillion-dollar infrastructure bill that includes numerous provisions aimed at climate change, including additional funding for electric vehicles (EVs) and EV infrastructure, improvements to electricity grids, and other infrastructure improvements aimed at reducing GHG emissions.

In addition, a large spending package, the Inflation Reduction Act (IRA), contains numerous climate change provisions. The IRA passed the US Senate on 7 August 2022, and passed the US House of Representatives on 12 August 2022, and was signed into law by President Biden on August 16, 2022. The IRA represents one of the most significant actions by the federal government on climate change.

The IRA is a US$370 billion climate and tax package that includes additional incentives for renewable energy, carbon capture, electric vehicles and other climate measures. The measure will enable the United States to cut greenhouse gas emissions by 40 per cent below 2005 levels by 2030, a significant step towards achieving the US NDC of a 50 per cent reduction from 2005 by 2030. Among other things, the IRA contains the following measures aimed at bolstering GHG reductions in the United States:

- expansion of offshore leasing for wind energy, although with parallel provisions requiring oil and gas leases to be offered over large tracts of the outer continental shelf as a condition of making wind leases available;
- air emissions: the IRA includes major provisions aimed at reducing GHG emissions, such as HFC refrigerants;
- methane: the IRA substantially increases support for EPA's existing efforts to address methane emissions and also creates a new system of fees that would impose charges on owners of oil and gas infrastructure if methane emitted from that infrastructure exceeds specified thresholds;
- agriculture and forestry: the IRA includes several programs aimed at reducing GHGs from agriculture, promoting soil and forestry-based carbon sequestration, and improving the climate resiliency of farms and forests;

- alternative fuels: the IRA contains substantially expanded federal support for biofuels, sustainable fuels, hydrogen as a fuel and sustainable aviation fuels; and
- manufacturing: the IRA provides support for decarbonisation of GHG-intensive industries through measures like energy efficiency, transition to low-carbon inputs and use of materials that capture large volumes of carbon during manufacturing.

The IRA also includes major revisions to the nation's system of tax credits for renewable energy production, carbon capture and sequestration, and advanced manufacturing. It will extend the existing system of Investment Tax Credits and Production Tax Credits, and it will maintain or increase tax credits available for projects that are built using labour that is paid prevailing wages with qualifying apprenticeship programmes. The IRA also creates several new tax credits, such as for renewable aviation fuels and clean hydrogen. Finally, after 2025, the IRA will phase out the existing system of credits in favour of a new technology-neutral system that would award credits for any technology that produces carbon-free energy and keeps that system in place until the nation's electricity sector reduces its GHG emissions to 25 per cent of 2022 levels.

The IRA represents a major expansion of US climate policy. While some of the provisions within the IRA will become effective immediately, many will require implementation through agency rulemaking and other actions. As a result, it may be several years before the full impact of the IRA is apparent.

National regulatory authorities

5 Identify the national regulatory authorities responsible for climate regulation and its implementation and administration. Outline their areas of competence.

EPA is the primary national regulatory authority with responsibility for the regulation of GHG emissions. EPA's authority includes the promulgation and enforcement of CAA standards for GHG emissions for both mobile and stationary sources, GHG reporting programmes, adaptation to a changing climate and protection of drinking water aquifers under the federal Safe Drinking Water Act with respect to underground injection of CO_2 and other materials.

The Council on Environmental Quality (CEQ) is charged with ensuring federal agencies comply with the National Environmental Policy Act (NEPA) in assessing the potential environmental impacts of major federal actions. Consideration of climate change impacts in NEPA analyses continues to be primarily guided by court decisions on agency rulemaking processes, land use planning documents, leasing decisions and individual project permitting decisions, most often in the energy or transportation contexts. These litigation outcomes have not been uniform, but generally trend toward requiring greater consideration of GHG emission impacts, including downstream effects further removed from the immediate federal action. In July 2020, CEQ amended the nearly 40-year-old regulations implementing NEPA applicable across the federal government. Those regulations were challenged in litigation, including allegations that CEQ limited the scope of cumulative impacts analysis including climate change. However, most of these lawsuits have been stayed due to President Biden's regulatory freeze, which directed federal agencies to review rules promulgated under the Trump administration. In February 2021, CEQ issued a notice rescinding the 2019 draft guidance document that gave federal agencies significant discretion over how they should consider GHG emissions under NEPA. The Biden administration is reconsidering the 2020 regulatory amendments in a two-step process. In April 2022, CEQ restored some of the provisions modified in 2020, including changes to streamline the NEPA review process. CEQ intends to make 'broader changes' to NEPA in Phase 2, including in environmental justice and public participation. The Biden administration also rescinded the 26 June 2019 CEQ draft guidance to address how agencies should consider GHG emissions in the NEPA process and intends to release new guidance that ostensibly will broaden such analysis. President Biden established a President's Council of Advisors on Science and Technology and a Task Force on Scientific Integrity.

Additional federal agencies also are responsible for programmes and regulations related to climate change, including the Department of the Treasury and the Internal Revenue Service (which administer certain tax incentive programmes); the Department of Energy; Department of Agriculture (USDA); Securities and Exchange Commission (SEC); Department of the Interior; Department of State; Department of Commerce; National Aeronautics and Space Administration; and others. More recently, financial regulators have focused on the regulation of climate-related risks, information, and disclosures.

GENERAL NATIONAL CLIMATE MATTERS

National emissions and limits

6 What are the main sources of emissions of greenhouse gases (GHG) (or other regulated emissions) in your country and the quantities of emissions from those sources? Describe any limitation or reduction obligations. Do they apply to private parties in your country?

The most recent comprehensive GHG emissions data for the United States is EPA's 'Inventory of US Greenhouse Gas Emissions and Sinks', which covers the period from 1990 to 2019. Mandatory GHG reporting began in 2011 for certain industries and in 2012 for others. As a result, EPA's 2021 report includes robust GHG emissions data from various sectors of the US economy. In 2020, total gross US GHG emissions were 5,222 million metric tons of carbon dioxide equivalent (MMT CO_2 Eq) after accounting for sequestration from the land sector. The main sources of GHG emissions include the electricity generation, transportation, industrial, agricultural and commercial sectors. Complete figures by sector are available in EPA's 2021 GHG Inventory.

GHG emissions standards apply to private commercial entities to the extent that the entity is subject to regulation by the relevant national or state authority. As noted above, there is no national GHG emissions legislation or regulation; rather, sources currently are regulated under the CAA and other federal laws, and by state laws.

National GHG emission projects

7 Describe any major GHG emission reduction projects implemented or to be implemented in your country. Describe any similar projects in other countries involving the participation of government authorities or private parties from your country.

At the federal level, GHG emission reductions are primarily driven by US CAA regulation, which does not currently contemplate emissions reduction projects or carbon offsets as compliance mechanisms. Certain other programmes provide incentives for carbon sequestration and other GHG removals. EPA also implements strategies to help organisations reduce their GHG emissions, including the ENERGY STAR program and Green Power Partnership. At the state level, GHG emissions reductions are driven by a range of policies, including state and regional cap and trade programs, renewable power requirements, low carbon fuel programmes, energy efficiency programmes, and a range of other sector-specific measures adopted under state law.

Section 45Q of the Tax Code provides tax credits for capturing and sequestering carbon oxides that would otherwise escape to the atmosphere, and the USDA also implements various programmes to support and incentivise carbon sequestration in the agricultural and forestry

sectors. The 45Q tax credit programme and USDA incentive programmes have spurred innovation and the development of various GHG removal or sequestration actions in the United States. Private carbon offset markets have also spurred development of a wide array of carbon sequestration projects and programmes in the forestry and agriculture sectors, among others. The Inflation Reduction Act will substantially expand tax credits for carbon sequestration.

DOMESTIC CLIMATE SECTOR

Domestic climate sector

8 | Describe the main commercial aspects of the climate sector in your country, including any related government policies.

Commercial climate business in the United States is fragmented, largely owing to the lack of comprehensive national climate change regulation and the lack of a single registry or exchange for the trading of GHG allowances, offsets, and other instruments. Carbon offset project development is rapidly accelerating, and the generation of offset credits has increased significantly as entities seek offsets for use in compliance with California's cap-and-trade programme and to fulfil voluntary GHG reduction commitments. At the same time, US financial regulators, including the Commodity Futures Trading Commission and the SEC are revisiting their regulation and oversight of environmental commodities markets, including carbon offsets.

GENERAL GHG EMISSIONS REGULATION

Regulation of emissions

9 | Do any obligations for GHG emission limitation, reduction or removal apply to your country and private parties in your country? If so, describe the main obligations.

Various national, regional and state programmes exist in the United States to regulate GHG emissions. The main programmes are regulations issued under the CAA, federal motor vehicle fuel economy standards, California's cap-and-trade programme, a similar programme in the State of Washington, and the Regional Greenhouse Gas Initiative (RGGI). California and Oregon also have Low Carbon Fuel Programs (LFCS), which govern the carbon intensity of certain fuels.

The Biden administration's 'whole-of-government' approach to climate change is having an enormous impact on US GHG policy, as is the Biden administration's goal of net-zero GHG emissions for the United States by 2050. Individual states are also driving significant changes in US climate policy. At present, 12 states have binding net-zero GHG emissions targets (typically by 2045 or 2050) and another 11 have similar non-binding targets. Another eight states have binding GHG emissions reduction requirements in the 80–95 per cent range. Collectively, these state and federal policy pronouncements are beginning to lead to significant changes in both voluntary and mandatory GHG reduction and regulation programmes around the country, across numerous sectors.

GHG emission permits or approvals

10 | Are there any requirements for obtaining GHG emission permits or approvals? If so, describe the main requirements.

Certain stationary sources are required to obtain CAA Title V operating permits and prevention of significant deterioration (PSD) permits for GHG emissions. Under the CAA's 'cooperative federalism' approach, most states manage GHG permitting in conjunction with any applicable state laws or programmes. Typically, any applicable New Source Performance Standards GHG emissions limits will be incorporated into a facility's Title V operating permit. When obtaining permits under the PSD programme, sources must evaluate available emissions reduction options to determine the 'best available control technology' for that facility, which are made on a case-by-case basis considering energy, environmental and economic impacts, and other costs. Over time, technological advancements increase the degree of attainable emissions reductions. GHG considerations also become relevant in certain permitting actions, including those under NEPA and analogous state laws, which may require permit applicants to take into account GHG emissions related to a specific project.

Several market-based permit systems also exist: California and Washington now have state-level cap-and-trade programmes requiring major emitters to obtain permits to release GHGs, and 11 states participating in the RGGI have a cap-and-trade programme covering the electricity sector.

Oversight of GHG emissions

11 | How are GHG emissions monitored, reported and verified?

EPA's mandatory GHG Reporting Rule requires reporting of GHG data and other relevant information for facilities in 41 source categories. EPA compiles reported GHG emissions to create its annual GHG inventory for the United States. Compliance for covered sources is mandatory and administrative, civil or criminal penalties may apply for violations. Several states have also implemented GHG reporting rules, and the reporting thresholds differ by state. Entities must comply with both federal and state GHG reporting requirements, if applicable. According to EPA, the GHG Reporting Rule covers over 8,000 US facilities.

In 2010, the SEC issued interpretive guidance regarding required disclosures by companies of their climate change-related risks. On 4 March 2021, the SEC announced the creation of a Climate and ESG Task Force within the Division of Enforcement. Although the 'materiality' standard still currently provides the threshold for required disclosures in the United States, in 2021 the SEC also issued a specific request for comments regarding whether changes are needed to its GHG disclosure rules. In May 2022, the SEC proposed new disclosure and reporting requirements for public companies that would significantly expand current climate risk reporting requirements while also imposing new requirements related to GHG and ESG disclosures.

Environmental groups, investors, and shareholders also are increasingly driving changes to climate risk reporting by companies in the United States. Companies may now face dozens or even hundreds of requests for data and information on how they assess and disclose climate-related risks, and there has been increased adoption of third-party disclosure standards, including those published by the Task Force for Climate-Related Financial Disclosures and the Sustainability Accounting Standards Board.

The US Federal Trade Commission (FTC) appears poised to significantly refresh its guidelines for the Use of Environmental Marketing Claims (Green Guides). On 2 July 2021, the FTC published its 10-year regulatory review schedule indicating that the agency will initiate a review of the Green Guides in 2022, and a proposal is widely expected in the second half of 2022. This action is in line with the global trend toward more scrutiny of claims and substantiation, including actions within the European Union requiring enhanced substantiation for environmental claims.

GHG EMISSION ALLOWANCES (OR SIMILAR EMISSION INSTRUMENTS)

Regime

12 | Is there a GHG emission allowance regime (or similar regime) in your country? How does it operate?

There is no mandatory GHG allowance regime at the federal level. The Regional Greenhouse Gas Initiative (RGGI), California and Washington

operate cap-and-trade programmes with associated emissions allowance regimes.

RGGI, the first market-based GHG reduction scheme in the US, currently encompasses the eastern states of Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, Vermont and Virginia. RGGI lowered its GHG emissions cap beginning in 2014 to 91 million short tons, with annual follow-on decreases of 2.5 per cent from 2015 to 2020. In August 2017, RGGI members approved measures to extend RGGI to 2030, with a further 30 per cent reduction in GHG emissions during that time. Membership in RGGI is voluntary and subject to change; New Jersey withdrew from RGGI in 2011 but rejoined in 2019. Virginia joined RGGI in 2020, and Pennsylvania is considering joining the programme.

RGGI is limited to the power sector and uses an allowance system for compliance; electric power generators subject to RGGI are required to hold CO_2 allowances equal to the amount of CO_2 they emit in a given compliance year. Each RGGI state issues allowances in an amount defined by each state's applicable law or regulation implementing RGGI. Collectively, these allowances comprise the annual RGGI cap and are distributed through quarterly auctions. RGGI also utilises a cost containment reserve system to allocate and auction additional allowances when needed to limit price volatility that, combined with periodic over-supply, has kept prices low but has also frustrated efforts to create a market for carbon offsets in RGGI states. An Emissions Containment Reserve, which allows states to withhold allowances from auction if reduction costs are lower than projected, will allow more dynamic response to market conditions and may have the effect of stabilising or raising slightly the cost of RGGI allowances.

California's Global Warming Solutions Act (AB 32), signed into law on 27 September 2006, established a mandate to reduce GHG emissions to 1990 levels by 2020 and granted broad authority to the California Air Resources Board (CARB) to develop and implement a broad strategy to achieve that goal. In September 2016, a new bill (SB 32) extended and expanded the state's commitment to reducing GHG emissions, establishing a new reduction target of 40 per cent below 1990 levels by 2030. CARB's strategy to achieve these emission reduction goals is set forth in its Scoping Plan and includes programmes in nearly every sector of the economy. CARB's updated 2022 Scoping Plan outlines a concrete plan for the state to achieve carbon neutrality by 2045. The Plan builds on the 2017 update evaluating emissions reductions needed in the electricity, transportation, industrial and building sectors. The 2022 update went beyond the 2017 plan to detail strategies for reductions in short-lived climate pollutants and carbon dioxide removal. It also reduced the role that the multi-sector cap-and-trade GHG emissions programme, first implemented in 2013, will play. As proposed in 2017, the programme governed 80 per cent of GHG emissions in the state and is one of the largest carbon markets in the world. However, according to the 2022 plan, to meet its goal, the state needs 27 per cent lower emission reductions from cap-and-trade than what was planned for in 2017. The cap-and-trade programme will be revised in 2023. On top of these mandates, the Clean Energy and Pollution Reduction Act of 2015 establishes state-wide goals in California for 2030 of 50 per cent electricity generation from renewable resources and doubling energy efficiency in electricity and natural gas usage.

CARB sets an annual cap on GHGs and issues a limited number of emission allowances, each of which authorises its holder to emit one MtCO2e. The number of available allowances is limited by the cap, and declines by approximately 3 per cent each year. Entities that emit 25,000 MtCO2e annually are obliged to surrender a certain number of compliance instruments to CARB, consistent with each entity's reported emissions. Compliance instruments consist primarily of allowances, which can be purchased from CARB at quarterly auctions. In addition, up to 8 per cent of a covered entity's obligation can be met with CARB-certified offsets, but starting in 2021 this number will drop to 4 per cent, then increase to 6 per cent in 2026. Both allowances and offsets may also be bought and sold on the secondary market, subject to certain restrictions. Covered entities are required to disclose substantial information to CARB, including information about corporate ownership and affiliates, directors and officers, high-level employees, and legal and market-strategy advisers.

On 17 May 2021, Washington Governor Jay Inslee signed into law the Washington Climate Commitment Act, which creates a state-wide cap on GHG emissions that will decline over time, and a limited trading system for carbon credits that can be sold to entities requiring credits to meet their individual GHG emission limits. Beginning on 1 January 2023, all sources emitting more than 25,000 MtCO2e will be subject to the cap and will be required to purchase credits sufficient to meet their emissions. Allowed permits will decline over time until a 90 per cent reduction in GHGs over 1990 emissions levels is achieved in 2050. An annual auction of GHG permits will be conducted by the Washington Department of Ecology, with revenues dedicated to programmes for the reduction of carbon emissions, climate resiliency, support of renewable energy and reduction of GHGs in agriculture. Trading linkages will be established to carbon markets in other jurisdictions to permit the purchase of allowances from those markets, which could then be applied to Washington's GHG limits. On 17 May 2022, one year after Governor Inslee signed the CCA, Ecology announced that it is seeking public comment on its proposed Climate Commitment Act Program Rule (Chapter 173-446 WAC). The proposal would adopt specific administrative rules governing the operation of Washington's 'cap-and-invest' programme.

Registration

13 | Are there any GHG emission allowance registries in your country? How are they administered?

There is no GHG allowance regime at the federal level. The registry for RGGI allowances is called the 'CO_2 Allowance Tracking System'. Each RGGI allowance has a unique serial number, which then tracks initial ownership, transfer and retirement of allowances. California and other linked jurisdictions utilise the Compliance Instrument Tracking System Service (CITSS) as an allowance registry, which tracks the issuance, initial ownership, transfer and retirement of allowances and offsets within the Western Climate Initiative (WCI), which encompasses the CA programme. WCI conducts financial audit reports and RGGI periodically assesses the presence of any anticompetitive effects.

Obtaining, possessing and using GHG emission allowances

14 | What are the requirements for obtaining GHG emission allowances? How are allowances held, cancelled, surrendered and transferred? Can rights in favour of third parties (eg, a pledge) be created on allowances?

There is no GHG allowance regime administered by the federal government. California (and its CITSS platform) and RGGI each maintain rules and systems for the issuance, auction, trading, banking, transfer and retirement of emissions allowances. Any qualified party can participate in RGGI allowance auctions; auction rules limit the number of allowances that associated entities may purchase in a single auction to 25 per cent of the total allowances offered for auction. California conducts quarterly auctions of GHG emission allowances. Both entities that are covered by California's cap-and-trade programme, and others opting into the programme, can participate in the auctions. Washington will follow a model similar to California's.

While some CA allowances are allocated to entities to prevent leakage, most are auctioned. RGGI and California auctions have recently set price records, with RGGI allowances selling for US$13.90 and CA allowances selling at US$30.85. In general, market participants must hold instrument trading accounts and be eligible to purchase and hold

such instruments. Holding caps may also apply. Compliance entities must surrender or retire a volume of instruments equal to their covered GHG emissions each reporting period; retirement is facilitated through the relevant registry system.

TRADING OF GHG EMISSION ALLOWANCES (OR SIMILAR EMISSION INSTRUMENTS)

Emission allowances trading

15 What GHG emission trading systems or schemes are applied in your country?

There is no national GHG allowance regime or national-level emission trading system. Concerning voluntary markets, there is no consolidated registry or trading system. Each allowance issuer or registry maintains its own trading platform, and as a result, the market is fragmented. Most transactions occur as over-the-counter bilateral transactions, or through brokers. Each registry or issuer has its own rules concerning trading, banking, and retirement, but in general voluntary carbon offsets may be freely transacted, pledged or securitised. The Commodity Futures Trading Commission (CFTC) regulates carbon offsets as environmental commodities, and certain transactions may be subject to CFTC rules.

Trading agreements

16 Are any standard agreements on GHG emissions trading used in your country? If so, describe their main features and provisions.

No, although a variety of common terms are found in most emissions reduction purchase agreements and similar agreements used to facilitate such transactions. As a result, many transactions are conducted through similar Emissions Reduction Purchase Agreements.

SECTORAL REGULATION

Energy sector

17 Give details of (non-renewable) energy production and consumption in your country. Describe any regulations on GHG emissions. Describe any obligations on the state and private persons for minimising energy consumption and improving energy efficiency. Describe the main features of any scheme for registration of energy savings and for trade of related accounting units or credits.

The United States is the world's largest producer of oil and natural gas. In 2020, the United States produced 6,787,540,000 barrels and consumed 6,613,800,000 barrels of crude oil and petroleum products. In 2020, there were 40.58 trillion cubic feet of gross withdrawals of natural gas in the United States, and the country consumed 30.41 trillion cubic feet of natural gas. In 2019, the United States produced 706,307,000 short tons of coal and consumed 588,415,000 short tons of coal. In 2019 (the latest year for which data is available), the United States produced 200,000 pounds of uranium concentrate, and nuclear power plants generated 789.9 billion kilowatt hours of electricity. According to EPA's 2020 report, total US GHG emissions were 6,558 $MMtCO_2e$ in 2019, representing a decrease of about 1.7 per cent from 2018 levels.

The DOE runs the Federal Energy Management Program, which focuses on reducing energy consumption and increasing the proportion of renewable energy utilised at federal agencies. The DOE also runs a 'Better Buildings' programme, intending to increase building energy efficiency by 20 per cent over the next decade across the commercial, public, industrial and residential sectors. Through these and other programmes, the federal government continues to create incentives and support energy efficiency and related technologies to reach net-zero emissions by 2050.

California, Oregon and Washington have all enacted Low-Carbon Fuel Standards requiring significant reductions in the carbon intensity of transportation fuels, joining with British Columbia to create a market for low-carbon fuels covering the entire West Coast. California's programme requires a 20 per cent reduction in the carbon intensity of motor fuels by 2030, which refiners can achieve either by blending biofuels with gasoline or diesel, or by purchasing credits, which can be generated by, for example, vehicle electrification. The other states have adopted similar mandates.

Other sectors

18 Describe, in general terms, any regulation on GHG emissions in connection with other sectors.

In 2009, EPA determined that the six primary GHGs recognised by the UN reasonably may endanger public health and welfare. Concurrently, EPA determined that GHG emissions from motor vehicles contribute to pollution that endangers public health and welfare. Since then, EPA has worked to implement GHG reductions from on-road vehicles through fuel efficiency and certain vehicle efficiency requirements.

In September 2011, in coordination with the National Highway Traffic Safety Administration (NHTSA), EPA established fuel economy standards for light-duty cars and trucks and the first phase for medium and heavy-duty trucks. Under the Obama administration, NHTSA proposed aggressive Corporate Average Fuel Economy (CAFE) standards for cars and light trucks for model years 2022 to 2025. These were rolled back by the Trump administration but were re-established by the Biden administration in March 2022. The CAFÉ standards for model years 2024 to 2026 require fuel economy of 49 mpg by model year 2026.

While EPA generally has nationwide authority to set emission standards, the CAA grants California the special ability to set its standards, which may be followed by other states, so long as California receives a waiver from EPA. California Governor Gavin Newsom declared in a September 2020 Executive Order, that all new consumer car sales in California must be zero-emission vehicles beginning in 2035, and all new medium-duty and heavy-duty trucks and buses must be zero-emission by 2045. Many other states have adopted CAA emissions requirements for vehicles, and a few have also announced similar zero-emissions policies.

On 15 August 2016, EPA promulgated an endangerment finding under section 231(a)(2)(A) of the CAA for aircraft, which determined that GHG emissions from certain classes of aircraft engines, including those used by most large commercial aircraft, contribute to the air pollution that causes climate change and endangers public health and welfare. According to EPA, GHG emissions from aircraft represent 12 per cent of transport-related GHG emissions in the United States, and 3 per cent of total US GHG emissions. In March 2019, the FAA announced its Monitoring, Reporting, and Verification Program for CORSIA. Applying to US air carriers and commercial and general aviation operators, the FAA's programme consists of voluntary carbon emissions reporting to establish standardised practices to implement CORSIA. On 11 January 2021, the EPA finalised the first domestic GHG emission standards for aircraft. See *Final Rule, Control of Air Pollution From Airplanes and Airplane Engines: GHG Emission Standards and Test Procedures*, 86 Fed. Reg. 2136. These CAA standards would apply to manufacturers of new aircraft and new aircraft engines, with compliance determined as part of the FAA's airworthiness certification process. The standards rely largely on fuel efficiency, and draw heavily from the 2017 Airplane CO_2 Emission Standards established by ICAO. EPA explained that aligning domestic standards with international standards would bring 'substantial benefits for future international cooperation' on aircraft emissions, which the agency deemed 'key for achieving worldwide emission reductions.' Id. at 2,144–45. In November 2021, the FAA also published the US Aviation Climate Action Plan, which

outlines strategies for moving the domestic aviation industry towards net-zero emissions by 2050. The plan relies on more efficient aircraft and engine technologies, production and use of sustainable aviation fuels, advancements in airport operations, international cooperation and support for climate science research. At the same time, the plan notes that 'the decarbonization of the aviation sector is extremely challenging'.

When GHGs became a 'regulated pollutant' under the CAA, EPA undertook various rulemaking processes to incorporate GHG emissions into programmes applicable to stationary sources, which include the Title V operating permit programme and the Prevention of Significant Deterioration programme, as well as New Source Performance Standards for both existing and new electric generating units. In an effort to regulate GHG emissions from existing coal-fired power plants, EPA released the Clean Power Plan (CPP) in 2015, which became mired in litigation. Then on 21 August 2018, EPA proposed under the Trump administration to replace the CPP with the Affordable Clean Energy Rule (ACE Rule), which EPA then finalised on 9 June 2020. This rule, too, became the subject of fierce litigation, and in June 2022, the Supreme Court reviewed the DC Circuit's decision to vacate the ACE Rule. In June 2022, the Supreme Court's decision in *West Virginia v EPA* further concluded that Congress did not grant EPA the authority to devise emission caps based on an approach that could lead to a generation-shifting approach through 'outside the fence line' control measures. As a result, the court concluded, EPA exceeded its authority when enacting the CPP. Currently, there are no significant federal GHG regulations imposed on existing power plants, although the Biden administration has announced plans to adopt such rules. Following the decision in *West Virginia v EPA,* it is likely that such rules will focus on aggressive 'inside the fence line' efficiency and emissions reduction measures, potentially including carbon capture and sequestration.

In 2016, EPA issued new standards specific to methane emissions from new and modified oil and gas wells and related facilities. Following an attempted roll-back by the Trump administration, President Biden signed legislation to reinstate the Obama-era standards. In late 2021, the Biden Administration took several new actions on methane emissions. In November 2021, EPA proposed a rule that would reduce methane and other emissions from both new and existing sources in the oil and natural gas industry. The Biden Administration also released a 'U.S. Methane Emissions Reduction Action Plan' announcing potential measures across numerous sectors, including oil and gas, landfills, abandoned mines, agriculture and others. We expect continued regulatory scrutiny on methane emissions. The IRA will further impose a system of fees aimed at reducing certain methane emissions from pipelines, orphaned wells and other fossil fuel infrastructure.

RENEWABLE ENERGY AND CARBON CAPTURE

Renewable energy consumption, policy and general regulation

19 Give details of the production and consumption of renewable energy in your country. What is the policy on renewable energy? Describe any obligations on the state and private parties for renewable energy production or use. Describe the main provisions of any scheme for registration of renewable energy production and use and for trade of related accounting units or credits.

The Energy Policy Act (EPAct) of 1992 was enacted in an effort to address many aspects of energy supply and demand, including alternative fuels, renewable energy and energy efficiency. Significant amendments in 2005 further created or bolstered federal incentives for energy efficiency, biofuels, and numerous types of renewable energy. Since then, the US Congress has regularly extended tax credits for wind and solar energy production, while adopting new tax incentives for carbon sequestration. The federal government also has a programme for leasing federal lands on the outer continental shelf for offshore wind development, as well as on-shore leasing of federal lands for wind, solar and other energy development. In addition, the Federal Energy Regulatory Commission (FERC) recently announced several measures aimed at expanding transmission and other infrastructure to support renewable energy development across the United States.

At the federal level, the DOE loan guarantee programme backs investment in renewable power, energy efficiency and commercial climate technologies. Loans backed by the DOE have supported investment in solar, wind, geothermal, nuclear and energy storage technologies, among others. In 2013, the DOE announced the availability of US$8 billion in loan guarantees for advanced energy projects that substantially reduce GHGs and other air pollution. In 2014, the DOE announced the availability of US$4.5 billion in loan guarantees available for innovative renewable energy and energy efficiency projects in the United States that reduce GHG emissions. In 2021, DOE announced it had more than US$40 billion in loan guarantee capacity available to support clean energy projects. In 2022, it announced its first loan guarantee of US$504 million for advanced Clean Energy Storage in nearly a decade. The DOE also runs parallel loan programmes for nuclear energy projects and 'advanced fossil energy' projects, each with its own solicitations and funding caps.

Two federal tax credits also provide financial support for renewable energy facilities. The production tax credit provides a tax credit for each kilowatt hour produced by eligible renewable power facilities. Combined with state RPS programmes, the PTC has been a major driver of wind power development in the United States: between 2007 and 2014, US wind capacity nearly quadrupled. The business energy investment tax credit (ITC) was also significantly expanded in 2008, which provides tax credits for capital investments in solar energy facilities, fuel cells, small wind turbines, geothermal systems, microturbines and combined heat and power. The PTC and ITC have been scheduled to gradually step down or phase out over time, but legislation passed in December 2020 extended these tax credits. The Inflation Reduction Act (IRA) will extend and expand both tax credits, and then replace them starting in 2025 with a technology-neutral approach that provides tax credits to any technology that produces electricity on a net-zero basis, with tax credits phasing out once electricity-related GHG emissions fall to 25 per cent of 2022 levels.

The federal government is also working to facilitate renewable power generation on public lands through a variety of programmes that are designed to streamline permitting and leasing. For example, the Department of the Interior and Bureau of Land Management facilitate a solar energy programme in six western states, and the Bureau of Ocean Energy Management (BOEM) is working to identify and lease offshore wind energy areas for commercial wind development. The federal government is also working to streamline permitting for renewable energy projects on federal lands, and to support the development of additional electricity transmission.

A number of states have binding requirements to shift to 100 per cent renewable or non-emitting resources in the electricity sector by mid-century. These include California, Hawaii, Oregon, Washington, Colorado, Nevada, New Mexico, Oregon, Maine, Virginia and New York, as well as the District of Columbia and Puerto Rico. Several other states have regulatory or executive orders in place requiring the same goal, including Wisconsin, Connecticut, New Jersey, Rhode Island and Arizona.

About 30 states, plus Washington, DC, have enacted binding renewable portfolio standards (RPS). Eighteen states plus the District of Columbia and Puerto Rico have also adopted laws or policies requiring 100 per cent renewable or non-emitting electric generation by mid-century. Several other states have non-binding RPS programmes or renewable energy goals. State RPS programmes operate by setting renewable energy targets for each year and requiring electric utility companies to achieve that level of renewable power. As a result, RPS programmes are the primary drivers for renewable energy investment in

the United States and are spurring significant investment in renewable energy infrastructure in many states. RPS compliance is usually managed through a system of tradeable renewable energy credits (RECs), with one REC representing one MWh of renewable power. In general, RECs are registered by state agencies and are tradeable instruments.

In addition to mandatory RPS programmes, 'green power' programmes allow US energy consumers (including residential, commercial and industrial users) to purchase renewable or 'green' power from their utility company or independent power supplier. Both energy suppliers and businesses looking to offset energy consumption purchase RECs on the voluntary market to meet green power targets and demand. Voluntary REC supply is dominated by wind, though solar is increasing its market share. It is estimated that more than 50 per cent of retail customers in the United States now have an option to purchase 'green' or low-carbon power from their utility. Net metering programmes allow grid-connected customers with renewable energy systems installed on their property to offset their electrical usage and sell excess electricity to their utility. Several states have also implemented feed-in-tariff programmes that provide a higher price to consumers generating certain types of renewable energy. These programmes have aided the expansion of residential and commercial solar projects in the United States, but net metering programmes are not universal across the United States.

Wind energy

20 | Describe, in general terms, any regulation of wind energy.

Wind energy projects are subject to a range of federal, state and local environmental, land use and natural resources laws and regulations. A project may require multiple permits and consultation and coordination between multiple agencies. Access to transmission also remains a significant constraint for many wind projects, since wind energy resources in the United States are not always located near demand. Developing new or expanded transmission lines can increase the complexity of the above regulatory requirements. For projects located on federal land, federal land management agencies act as the primary permitting authority. For projects on private or state land, in some states permitting authority is vested in one or more state agencies. In other cases, the primary permitting authority for a wind facility is the local planning commission, zoning board, city council or county board.

BOEM administers the offshore wind leasing process on the outer continental shelf (OCS) (three nautical miles offshore) through a competitive bidding process. Offshore wind projects also must coordinate with the US Coast Guard during construction and to address any navigational hazards. BOEM has held several auctions, resulting in the sale of various leases to develop offshore wind projects, primarily on the east coast. The timeline for developing an offshore wind project, however, is long, and the first wind turbines were only installed in US federal waters in 2020. The Biden administration has set a goal of developing 30 GW of offshore wind by 2030. In May 2021, BOEM approved an 800 MW project offshore of Martha's Vineyard, MA. And on 18 January 2022, BOEM approved the Construction and Operations Plan for the South Fork Wind Farm. Although project detractors are challenging those approvals, it represents the first federal approval of a large offshore wind facility in the United States. Several more large offshore wind projects are currently undergoing permitting and approval processes at BOEM. At present, approximately BOEM continues the offshore wind leasing process and is reviewing several other applications to permit, develop and operate large offshore wind projects in US waters. The IRA will further open up large parts of federal lands and the OCS to wind energy leasing and production, but would also condition such wind leases on first holding future federal oil and gas lease sales.

Renewable energy projects have seen significant litigation over environmental impacts and other issues. Litigation may involve local issues, such as noise, siting and site-specific impacts, or may implicate broader state or national policies. With respect to wind energy, impacts on birds are a frequent focus of litigation. The Migratory Bird Treaty Act (MBTA), the Endangered Species Act and the Bald and Golden Eagle Protection Act all protect certain species of birds with civil and criminal penalties. The Department of the Interior determined in 2017 that the MBTA is inapplicable to incidental injuries or killings of birds, including those caused by wind projects. The Biden administration has withdrawn this determination.

Solar energy

21 | Describe, in general terms, any regulation of solar energy.

Solar energy experienced another record year in 2021, accounting for approximately 46 per cent of all new generating capacity nationally, though solar power (both small and large-scale) still generates only a small percentage of the total electricity in the United States. Overall, US solar capacity grew by 23.6 gigawatts (a 19 per cent increase over 2020), despite ongoing tariffs on imported solar cells and modules and uncertainty created by supply chain problems.

Many states and the District of Columbia continue to offer incentives, such as up-front rebates, tax credits (including exemptions from property and sales taxes), production-based incentives, and solar renewable energy credits. An anticipated increase in the need for end-of-life management of photovoltaic (PV) solar panel waste is driving states such as California to take measures in support of streamlined solutions, including through a new 2020 regulation designating PV waste as 'universal waste', alongside electronics, batteries and other low-risk hazardous waste.

These trends reflect how residential solar, as well as commercial and utility-scale, projects have gained notable traction in an increasing number of jurisdictions across the country. Even so, traditional regulatory approvals and permits are required for these projects, regardless of scale. Residential solar installations, such as rooftop solar projects, generally do not require major regulatory approvals but are required to meet local and state building, zoning, land use and development regulations – including the acquisition of necessary permits. Larger commercial and utility-level solar energy projects implicate a much larger array of federal, state and local laws – including those concerning land access, siting, water rights, transmission and environmental review – all of which may be subject to litigation in the process of seeking regulatory approvals.

Hydropower, geothermal, wave and tidal energy

22 | Describe, in general terms, any regulation of hydropower, geothermal, wave or tidal energy.

FERC issues licences for construction of new hydropower projects. During the permitting process, FERC and the applicant must assure compliance with NEPA and must obtain a water quality certification from the appropriate state agency under the Clean Water Act (CWA). In recent years, with an eye toward encouraging this emissions-free resource, both Congress and FERC have enacted laws intended to reduce regulatory barriers for small hydropower projects, projects on existing dams, and projects in man-made conduits such as irrigation canals. In many cases, permittees also must obtain authorisations under various federal laws, including those protecting wildlife, such as the Endangered Species Act. In some states, additional authorisation may be required for hydropower resources to qualify for RPS or net metering programmes. With climate change an increasing concern, some states have increased focus on hydropower as a source of energy; in particular, states in the north-east are exploring ways to import more hydropower from Canada and increase capacity and production at

existing hydropower facilities. In 2020, the EPA finalised a rule revising its regulations for the CWA water quality certification process intended to promote hydropower projects. In June 2022, the EPA released a new proposed rule aimed at modifying the CWA Section 401 Certification Process in response to the Trump administration's changes in 2020.

Geothermal projects are regulated by a mix of federal and state agencies, with requirements varying by state and whether the project is located on state, federal or private land. The Geothermal Steam Act of 1970 requires the Department of the Interior to establish rules and regulations for the leasing of geothermal resources on lands managed by federal agencies. These regulations are issued by the Bureau of Land Management. Existing EPA Underground Injection Control Regulations under the federal Safe Drinking Water Act define Class V injection wells to include injection wells associated with the recovery of geothermal energy.

Waste-to-energy

23 Describe, in general terms, any regulation of production of energy based on waste.

Waste-to-energy is defined as a renewable energy source in many states and plants are therefore eligible to sell RECs. At present, the United States has fewer than 75 waste-to-energy facilities that combust municipal solid waste. There has been little development of new waste-to-energy plants since the 1980s and the 1990s; the first new waste-to-energy plant since 1995 was built in 2015. As combustion units, waste-to-energy systems are subject to regulatory requirements that are similar to fossil fuel-fired power plants, but often significantly more stringent. The CAA imposes numerous requirements on waste-to-energy facilities, which also must comply with the CWA, the Resource Conservation and Recovery Act and other federal, state and local laws. Waste-to-energy facilities and related ash landfills have come under increased legal and regulatory scrutiny in recent years and are at times the subject of lawsuits brought under environmental laws.

Biofuels and biomass

24 Describe, in general terms, any regulation of biofuel for transport uses and any regulation of biomass for generation of heat and power.

In 2007, EPA established a national Renewable Fuel Standard (RFS) programme that requires transportation fuel refiners to displace certain amounts of petrol and diesel with renewable fuels such as cellulosic biofuel, biomass-based diesel and advanced biofuel. The programme established the annual renewable fuel standards, responsibilities of refiners and other fuel producers, a trading system, compliance mechanisms and record-keeping and reporting requirements. Companies that refine, import or blend fossil fuels are obligated to meet certain individual RFS quotas based on the volume of fuel they introduce into the market. The production of biofuels is also subject to regulation under the CAA and other environmental laws. EPA adopted a new ethanol rule in 2019, which allows fuel blends containing up to 15 per cent ethanol to be sold year-round in 31 states. In 2022, EPA set the required minimum volume for transportation sector use at 15 billion gallons of corn ethanol and 5.63 billion gallons of advanced biofuels.

The Biden administration had delayed rules setting RFS volumes for 2021 due to pressure on both sides of the issue. Relatedly, the US Supreme Court recently issued a decision affirming the validity of 'waivers' issued to some smaller refineries that exempt those refineries from certain federal biofuels requirements. On the other hand, conservationists are suing EPA for failing to properly consider how increased land conversion and pesticide and fertiliser use needed to meet the 2022 biofuel targets would impact endangered species.

In 2018, EPA issued a policy statement indicating 'EPA's policy in forthcoming regulatory actions will be to treat biogenic CO_2 emissions resulting from the combustion of biomass from managed forests at stationary sources for energy production as carbon neutral'. The goal of EPA's pending actions was to 'promote the environmental and economic benefits of the use of forest biomass for energy at stationary sources, while balancing uncertainty and administrative simplicity when making programmatic decisions', acknowledging the need for clear regulatory policy even in the face of continued debate on an accounting framework for biogenic CO_2 emissions. Disagreement surrounding the potential rule stalled its progress in early 2020. The Biden administration has not indicated that it intends to finalise this rule, although EPA is facing pressure to maintain its carbon-neutral stance.

Carbon capture and storage

25 Describe, in general terms, any policy on and regulation of carbon capture and storage.

Carbon capture and storage (CCS) has substantial potential to reduce GHG emissions from industrial sources but has not been widely demonstrated on a commercial scale. Several large CCS demonstration projects in the United States are largely supported by resources allocated by the American Recovery and Reinvestment Act of 2009, as well as a variety of federal and state incentives, including tax credits and loan guarantees. On 1 December 2010, EPA published its final rule concerning an expansion of its GHG reporting rule to include facilities that inject and store CO_2 for geologic sequestration or enhanced oil and gas recovery.

In January 2014, EPA issued a final rule excluding CO_2 streams in CCS projects from classification as a hazardous substance under the Resource Conservation and Recovery Act, provided that the streams are injected into Class VI wells and not mixed or co-injected with any hazardous wastes. CCS projects are potentially affected by several other regulatory programmes. For instance, NEPA and state equivalents may present regulatory hurdles by requiring environmental review of project impacts. State and local agencies may also impose permitting requirements on CCS projects. High costs, complex regulatory schemes and the low price of natural gas have hindered the widespread development of CCS projects. In the future, lower technology costs and the development of multiple revenue streams from the CO_2 associated with CCS projects, particularly using captured CO_2 for enhanced oil recovery (EOR), may help spur CCS additional development.

President Biden has announced that his administration will support CCS activities, and recent legislation includes funding for research and development and grants to support this emerging industry. On 13 January 2021, the Treasury Department finalised rules to implement section 45Q of the Tax Code. The 45Q programme provides tax credits for capturing and sequestering carbon oxides that would otherwise escape to the atmosphere. The current rules provide tax credits of up to US$50 per ton of carbon captured and placed in secure geological storage, and tax credits of up to US$35 per ton of carbon injected into oil or natural gas wells for EOR, and for carbon captured and sequestered using photosynthetic or chemosynthetic processes or 'for any other purpose for which a commercial market exists'. Among the clarifications made in the final regulations is a definition of 'commercial markets'. The US Congress is considering a potential expansion of the 45Q tax credit as part of pending budget and infrastructure legislation; while there is bipartisan support for the 45Q programme, the likelihood and details of any expansion are difficult to predict at the time of writing. The DOE intends to accelerate geological carbon storage projects, each capable of permanently storing at least 50 million metric tons of captured carbon dioxide. BOEM also plans to initiate a process to create a programme for leasing offshore federal lands on the OCS for carbon storage, which could greatly accelerate development of large-scale projects, particularly in the Gulf of Mexico.

Agriculture and forests are a hot topic in current US climate discussions due to their ability to sequester carbon. A number of actions spanning both the public and private sectors are aimed at increasing forest preservation and conservation to increase carbon sequestration and to incentivise agricultural practices that either reduce GHG emissions or increase soil carbon sequestration. In February 2022, the USDA announced it would invest one billion dollars on projects for farmers, ranchers and forest landowners to facilitate practices that reduce emissions and capture and store carbon. The IRA will add significant additional funding for carbon capture based on agricultural or silvicultural practices. The USDA is tasked with promoting natural climate solutions and rewarding carbon sequestration activities. The USDA oversees a number of voluntary conservation programmes that focus on restoring and conserving forest and agricultural lands, and enhancing carbon sequestration. These programmes provide financial incentives for farmers and forest landowners to maintain and enhance carbon benefits associated with their farms and forests. With the USDA's charge to promote sustainable land management to increase sequestration, we expect increased funding to these programmes and renewed efforts to implement these programmes.

CLIMATE MATTERS IN TRANSACTIONS

Climate matters in M&A transactions

26 | What are the main climate matters and regulations to consider in M&A transactions and other transactions?

Entities must consider a range of climate issues when undertaking M&A transactions. Risks generally fall into three categories: regulatory, economic and operational risk related to climate change impacts. Some matters also present M&A opportunities, such as incentives related to renewable energy. Matters to consider include:

- material operational or financial risk related to climate change impacts on infrastructure, facilities, supply chains and the like;
- GHG reporting and permitting obligations for certain sectors;
- emerging disclosure requirements imposed by the SEC and other federal agencies;
- Environmental Protection Authority regulation of GHG emissions and related costs for higher-emitting industries;
- regulatory uncertainty given the rapid development of climate change law in the United States and globally;
- regulatory costs associated with assuring compliance with a plethora of federal, state and local climate change, energy efficiency and renewable energy programmes;
- litigation exposure to claims based upon alleged climate impact of corporate operations or of climate changes on corporate operations;
- direct and indirect effects of higher energy costs;
- financial disclosure and compliance obligations under Securities and Exchange Commission rules and state laws;
- adherence to the Equator Principles, if applicable, which include requirements for climate impacts;
- impacts on coastlines, ports and other infrastructure related to increased storm intensity and rising sea levels;
- impacts on natural resources and commodities related to climate change, such as water supplies, fisheries, forestry products and crops;
- global economic and security risks related to potentially destabilising impacts of climate change in certain regions; and
- market opportunities related to renewable power, renewable energy credits and offset trading, GHG mitigation and energy efficiency.

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UPDATE AND TRENDS

Emerging trends

27 | Are there any emerging trends or hot topics that may affect climate regulation in your country in the foreseeable future?

President Biden has issued several executive orders on climate change, has appointed climate change experts to key posts, and is taking a whole-of-government approach to climate change regulation and enforcement. Congress is also taking action, both on bipartisan measures (such as infrastructure spending for electric vehicles) and on more contentious issues.

President Biden signed the bipartisan infrastructure bill into law, a US$1.1 trillion bipartisan package. It includes a variety of climate-related provisions, such as support for vehicle electrification, carbon capture and storage, hydrogen fuels, hydroelectric power and nuclear power. It also aims to eliminate lead pipes, increase access to high-speed internet, build better roads and bridges, invest in public transit and passenger rail, and build resilient infrastructure with an eye towards mitigating climate change impacts and furthering environmental justice. The legislation also invests over US$50 billion to protect against droughts, heat, floods and wildfires, with additional investment in weatherisation. This and other pending legislation – combined with aggressive agency initiatives – are expected to drive additional climate change measures over the coming year. The US Congress also recently passed the Inflation Reduction Act, which will add further incentives for GHG mitigation, renewable energy and other climate-related actions.

Many states also have continued or increased climate regulation at the state level and through regional programmes. At present, 20 states have net-zero GHG emissions targets, representing a sizeable majority of the US economy. These federal and state actions are likely to lead to increased GHG regulation and action on climate change in the next one to three years.

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