THE LAW REVIEWS

THE MERGERS AND ACQUISITIONS REVIEW
THE RESTRUCTURING REVIEW
THE PRIVATE COMPETITION ENFORCEMENT REVIEW
THE DISPUTE RESOLUTION REVIEW
THE EMPLOYMENT LAW REVIEW
THE PUBLIC COMPETITION ENFORCEMENT REVIEW
THE BANKING REGULATION REVIEW
THE INTERNATIONAL ARBITRATION REVIEW
THE MERGER CONTROL REVIEW
THE TECHNOLOGY, MEDIA AND TELECOMMUNICATIONS REVIEW
THE INWARD INVESTMENT AND INTERNATIONAL TAXATION REVIEW
THE CORPORATE GOVERNANCE REVIEW
THE CORPORATE IMMIGRATION REVIEW
THE INTERNATIONAL INVESTIGATIONS REVIEW
THE PROJECTS AND CONSTRUCTION REVIEW
THE INTERNATIONAL CAPITAL MARKETS REVIEW
THE REAL ESTATE LAW REVIEW
THE PRIVATE EQUITY REVIEW
THE ENERGY REGULATION AND MARKETS REVIEW
THE INTELLECTUAL PROPERTY REVIEW
THE ASSET MANAGEMENT REVIEW
THE PRIVATE WEALTH AND PRIVATE CLIENT REVIEW
THE MINING LAW REVIEW
THE EXECUTIVE REMUNERATION REVIEW
THE ANTI-BRIBERY AND ANTI-CORRUPTION REVIEW
ACKNOWLEDGEMENTS

The publisher acknowledges and thanks the following law firms for their learned assistance throughout the preparation of this book:

ALLEN & OVERY LLP
BAKER MCKENZIE
BASHAM, RINGE & CORREA, SC
CLEARY GOTTlieB STEEN & HAMILTON LLP
COVINGTON & BURLING LLP
HENGELER MUELLER PARTNERSCHAFT VON RECHTSANWÄLTEN MBB
KHaitAN & CO
MATTOS FILHO, VEIGA FILHO, MARREY JR E QUIROGA ADVOGADOS
SHIN & KIM
URÍA MENÉNDEZ
VIEIRA DE ALMEIDA & ASSOCIADOS
WHITE & CASE LLP
CONTENTS

Editor’s Preface ................................................................. v

Theodore L. Garrett

Chapter 1 AUSTRALIA ......................................................... 1

Jennifer Hughes, Ilona Millar and Candice Colman

Chapter 2 BELGIUM ............................................................ 15

Gauthier van Thuyne and Fee Goossens

Chapter 3 BRAZIL ................................................................. 23

Lina Pimentel Garcia, Luiz Gustavo Bezerra and
Rafael Fernando Feldmann

Chapter 4 CANADA ............................................................... 31

Jonathan Cocker

Chapter 5 EUROPEAN UNION ............................................ 44

Jacquelyn F MacLennan and Tallat S Hussain

Chapter 6 GERMANY ............................................................ 61

Dirk Uwer and Moritz Rademacher

Chapter 7 INDIA ................................................................. 71

Sanjeev Kapoor and Anushka Sharda

Chapter 8 ITALY ................................................................. 82

Gianluca Atzori

Chapter 9 KOREA ............................................................... 94

Hyun Ah Kim and Rak Kyun Im
| Chapter 10 | MEXICO ................................................................. 105  
|           | Ricardo Eloy Evangelista Garcia and Mariana Arrieta Maza |
| Chapter 11 | NETHERLANDS ...................................................... 116  
|           | Henry van Geen, Jochem Spaans, Seppe Stax and  
|           | Rob van der Hulle |
| Chapter 12 | PORTUGAL ........................................................... 129  
|           | Manuel Gouveia Pereira |
| Chapter 13 | SPAIN ................................................................. 142  
|           | Carlos de Miguel and Bárbara Fernández |
| Chapter 14 | UNITED KINGDOM .................................................. 153  
|           | Tallat S Hussain |
| Chapter 15 | UNITED STATES .................................................... 172  
|           | Theodore L Garrett |
| Appendix 1 | ABOUT THE AUTHORS ............................................. 193 |
| Appendix 2 | CONTRIBUTING LAW FIRMS' CONTACT DETAILS .......... 203 |
EDITOR’S PREFACE

Environmental law is global in its reach. Multinational companies make business plans based on the laws and regulations of the countries in which they are headquartered and have manufacturing facilities as well as the countries in which they distribute and sell their products. Moreover, multinational companies have global environmental, health and safety goals and practices that tend to be worldwide in their scope for reasons of policy and operational consistency.

For these and other reasons, this first edition of The Environment and Climate Change Law Review is timely and significant. This book offers a review, by leading environmental lawyers, of significant environmental laws and issues in their respective countries around the world.

Climate change continues to dominate international environmental efforts, and we have also witnessed efforts to promote sustainability. Many countries are making efforts to promote conservation and renewable or green energy. Changes in reliance on coal and nuclear energy have impacts on the demand for other energy sources. All of these changes have impacts on efforts to reduce greenhouse gases.

Environmental law continues to change and evolve, as new regulations are adopted and existing rules are amended or challenged in courts or interpreted by agencies. In the United States, 2017 will witness a new President and an administration that is expected to have different priorities in the related areas of environment and energy. Future editions of this book will focus on changes and developments.

This book presents an overview and of necessity omits many details. The book thus should be viewed as a starting point rather than a comprehensive guide. Each chapter of this book, including mine, represents the views of the author in his or her individual capacity, and does not necessarily reflect the views of the authors’ firms or clients, or the authors of other chapters, or my views as the editor. This book does not provide legal advice, which should be obtained from the reader’s own lawyers.
I wish to thank the many authors who contributed their time and expertise to the preparation of the various chapters to this book. I also wish to thank the editors at Law Business Research for conceiving of this project and seeing it through. We hope this book helps you to gain a better understanding of environmental law in various countries around the globe.

Theodore L. Garrett  
Covington & Burling LLP  
Washington, DC  
January 2017
Chapter 1

AUSTRALIA

Jennifer Hughes, Ilona Millar and Candice Colman

I INTRODUCTION

Australia operates under a federal political regime, with a federal government, six states and several territories including two mainland territories each having their own political frameworks and ability to pass legislation. In Australia, environmental laws and policies are made at both the state and federal levels.

II LEGISLATIVE FRAMEWORK

i Commonwealth legislation

Australia’s Constitution does not contain an express power for the federal government to make laws concerning environmental protection. However, the federal government has relied upon the external affairs power to enact environmental legislation to achieve the aims of international treaties, for example the Convention on Biological Diversity. The federal government has also relied on its other constitutional powers to legislate including trade and commerce, corporations, the race power and finance and taxation powers.

The Environment Protection and Biodiversity Conservation Act 1999 (Cth) (the EPBC Act) is Australia’s primary environmental legislation and includes over 500 sections that aim to protect and manage matters of national environmental significance. This includes nationally listed threatened species and ecological communities, Ramsar wetlands, migratory birds, cetaceans, heritage places and protected areas.

1 Jennifer Hughes is a partner, Ilona Millar is a special counsel and Candice Colman is an associate at Baker McKenzie.

2 This includes nationally listed threatened species and ecological communities, Ramsar wetlands, migratory birds, cetaceans, heritage places and protected areas.
management of Australia’s fisheries and the management of federal protected areas, including marine reserves. There are also other federal environmental laws that deal with more specific environmental issues.3

ii International agreements

Australia is a party to multiple international agreements to protect the environment, including the United Nations Framework Convention on Climate Change,4 the Convention on Biological Diversity, the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the Convention on Wetlands (Ramsar Convention) and the Convention for the Protection of the World Cultural and Natural Heritage (World Heritage Convention). In addition, Australia is a party to bilateral environmental agreements, including Agreements with Japan5 and China6 on protection of migratory birds and their environment.

iii State and territory legislation

Australian states can enact environmental laws providing they do not conflict with any Commonwealth legislation. The Commonwealth legislation will prevail if it conflicts with a state law.7 In the territories,8 ministers possess executive powers regarding environmental protection and legislative assemblies may enact laws on issues within the authority of the relevant minister.9

In New South Wales (NSW), for example, major environmental laws are the Environmental Planning and Assessment Act 1979 (the EP&A Act) (which provides a system of planning and assessment, including an approval process for developments of either local or state significance) and the Protection of the Environment Operations Act 1997 (the POEO Act) (which aims to protect, restore and enhance the quality of the environment in NSW). Other environmental issues regulated by the states and territories include contaminated land management, environmentally hazardous chemicals, forestry, pesticides, radiation control and waste avoidance and management.

---

4 Australia has also ratified both the Kyoto Protocol and the Paris Agreement.
7 Constitution, Section 109; Commonwealth v. Tasmania (1983) 46 ALR 625.
8 Including the Australian Capital Territory, the Northern Territory and Norfolk Island.
III THE REGULATORS

i Federal
The Department of the Environment and Energy (the Department) is responsible for enforcing the EPBC Act.

ii State and territory
Most of the states and territories have designated environmental regulators as well as other government departments and authorities with regulatory powers. In NSW, for example, the NSW Environment Protection Authority (EPA) issues environment protection licences under the POEO Act, monitors emissions, investigates pollution and prosecutes individuals and corporates who break environmental laws; the Office of Environment and Heritage administers some environmental laws, for example the Heritage Act 1977, the National Parks and Wildlife Act 1974 and the Biodiversity Conservation Act 2016;¹⁰ and the Department of Planning and local councils also enforce planning and some environmental laws.

In many states and territories, any person can enforce environmental and planning laws by bringing proceedings in the appropriate courts. In certain cases, this can extend to criminal proceedings.

iii Courts
There are specialist environmental courts in NSW, Queensland and South Australia.¹¹ The NSW Land and Environment Court, for example, has an appellate and review jurisdiction that includes merits review, judicial review, civil enforcement, criminal appeals and civil claims relating to planning, environmental and mining legislation.

IV ENFORCEMENT

i Federal enforcement
The main offence provisions under the EPBC Act relate to taking an action that has, will have or is likely to have a significant impact on a matter of national environmental significance without approval; for example, clearing land that is habitat for a nationally listed threatened species without approval.¹²

A person who commits and offence can be liable for a civil penalty of up to A$900,000 for an individual and A$9 million for a body corporate, or for a criminal penalty of seven years’ imprisonment or a penalty of A$75,600 or both. The Department has, in the past, brought proceedings and obtained significant penalties for breaches of the Act, including

¹⁰ This Act has not yet entered into force.
¹¹ These are respectively the NSW Land and Environment Court, the Planning and Environment Court (Queensland) and the Environment, Resources and Development Court (South Australia).
a A$450,000 penalty for the deliberate clearing of a Ramsar wetland. The Department has also prosecuted a number of people for unlawfully fishing in Commonwealth marine reserves. The EPBC Act allows third parties to seek injunctions to remedy or restrain breaches of the Act if they demonstrate that they are an organisation whose objects or purposes include protecting, conserving or conducting research into the environment, or an individual who has engaged in those activities in the preceding two years. This provision has enabled a number of conservation groups to make administrative law challenges to decisions of the Federal Minister for the Environment under the EPBC Act; for example, approval of large coal mines. It has also been used to successfully obtain an injunction to prevent a Japanese whaling company from conducting whaling in Australia’s Antarctic territory.

ii State and territory enforcement

At the state and territory level the penalties for undertaking development or causing pollution without the necessary approvals or licences can be significant. In NSW, the POEO Act takes a tiered approach to breaches of the Act. Tier 1 offences are the most serious and will usually involve conduct that is wilful or negligent and can attract penalties of up to A$5 million for corporations and A$1 million and seven years’ imprisonment for individuals. Tier 2 offences include water, air, noise or land pollution, waste offences and breaches of licence conditions. These offences can attract penalties of up to A$2 million for corporations and A$500,000 for an individual for a failure to notify a pollution incident, and A$1 million for corporations and A$250,000 for individuals for other offences. Tier 3 offences are dealt with by penalty notices (on the spot fines) of up to A$15,000. A similar tiered approach is adopted under the NSW EP&A Act.

In number of states there is a positive statutory obligation to inform the relevant regulatory authority if certain types of environmental incidents have occurred or that land is contaminated. Failure to comply with these obligation is an offence. The types of notifiable incident can, at times, be relatively minor.

iii Environmental torts

Environmental torts and class actions are not common in Australia, probably because our statutory environmental laws give regulators strong powers to require clean up after environmental incidents. The area in which they are most likely to occur is where contamination has migrated from one site to another, the contamination is not so serious as to have the regulator get involved, but damages have been suffered by an adjoining landowner.

14 See, for example, Minister for the Environment and Heritage v. Wilson [2004] FCA 2.
15 Section 475 EPBC Act.
16 See, for example, Australian Conservation Foundation Incorporated v. Minister for the Environment (No. 2) [2016] FCA 1095.
iv Corporate liability

Corporations in Australia can be found guilty of environmental offences by reason of the conduct of their officers, employees and, in some circumstances, subcontractors.

In NSW legislation has broadened the potential scope of an employer’s liability for an employee’s actions. Provided that the employee is acting within the scope of their employment, the employer may be prosecuted for the employee’s breach or omission.\(^{18}\)

A company (and its directors and managers) may also be liable for the actions of subcontractors in certain circumstances. This will usually be the case where inadequate instructions are given or if the contractor has not been properly supervised. In *SPCC v. Australian Iron & Steel Ltd* (1992) it was held that a company was liable for acts of an independent contractor where the contractor caused a large spill of oil and tar by mistakenly cutting pipes containing the oil. Liability was attributed to the company on the basis that the instructions given were not sufficiently clear and that inadequate supervision was provided given the recognised potential danger of oil spilling from the pipes if cut. By contrast, in *SPCC v. Blue Mountains City Council* (1991) the Council was not liable for the action of a contractor where the Council could not have been aware of, or have had control over, the actions of the contractor.

In NSW a licence holder will automatically be found to be guilty of the offence of a breach of a licence condition even if the breach was committed by a contractor.

v Director liability

Environmental legislation in most jurisdictions exposes not only companies, but directors and persons concerned in the management of the company to liability for offences of the corporation. For example, in Western Australia, where an offence committed by the corporation is proved to have been committed with the consent or knowledge of a director or other officer concerned in the management of the corporation; or due to any neglect on his or her part, the director or officer may also be guilty of the offence. It is not necessary for the corporation to be prosecuted for such liability to arise.

Persons ‘concerned with the management’ of a corporation include various levels of management; from state and regional managers to depot or facility managers. They may also include supervisors and certain senior employees.

In NSW environmental offences are divided into the more serious ‘general executive liability offences’ and then ‘special executive liability offences’. For general executive liability offences, a director or manager of a company commits the same offence as his or her company unless he or she can prove:

\[\begin{align*}
\text{a} & \quad \text{they were not in a position to influence the conduct of the company; or} \\
\text{b} & \quad \text{they used all due diligence to prevent the offence by the company.}
\end{align*}\]

For special executive liability offences, the prosecution bears the legal burden of proving all of the elements of an offence before a director or manager can be found to be guilty of the same offence as their company, the elements being:

\[\begin{align*}
\text{a} & \quad \text{the corporate officer of the corporation commits an offence where the person knows or ought reasonably to have known that the executive liability offence would be or is being committed; and}
\end{align*}\]

---

that person fails to take all reasonable steps to prevent or stop the commission of the offence.

In Queensland, liability has recently been extended beyond corporations and corporate officers through the passing of the Environmental Protection (Chain of Responsibility) Amendment Act 2016. The Act empowers the Department of Environment and Heritage Protection (EHP) to enforce and recover costs against a company’s ‘related persons’. Related persons may include (subject to certain qualifications), a holding company, an owner of land on which the company carries out or has carried out an activity, or a person that the EHP decides has a ‘relevant connection’ to the company.

V REPORTING AND DISCLOSURE

i Environmental audits

Similar to other jurisdictions, with the introduction of ISO 14000 environmental management standards, a number of companies are incorporating periodic environmental audits into their management systems.

In some cases, government agencies may initiate environmental audits, for example through conditions of environmental licences. In NSW conditions requiring mandatory environmental audits can only be imposed where the appropriate regulatory authority reasonably suspects that there has been a contravention of the Act and the contravention has caused, or is likely to cause, harm to the environment. Companies are also able to undertake voluntary environmental audits under the POEO Act in NSW. In doing so, documents prepared for the audit may be protected and inadmissible in enforcement proceedings and cannot be inspected or seized by the EPA.

ii Reporting requirements

Environmental reporting is imposed through a number of federal, state and territory laws.

At the federal level, the National Greenhouse and Energy Reporting Act 2007 (Cth) provides a framework for corporations to report on greenhouse gas (GHG) emissions, energy use and energy production, where reporting thresholds for the corporate group or individual facilities are exceeded.

Environmental reporting obligations are also commonly imposed on companies undertaking licensed activities through conditions placed upon environmental or development approvals or environment protection licences. These may require annual compliance reporting or more frequent reporting of monitoring results for air and water discharges.

19 See, for example, in NSW Section 174 POEO Act.
20 Section 175 POEO Act.
21 Sections 180–183 POEO Act.
iii Notifiable incidents and contamination
As stated above, in a number of states there is a positive statutory obligation to inform the relevant regulatory authority if certain types of environmental incidents have occurred or that land is contaminated. Failure to comply with this obligation is an offence. The types of notifiable incident can, at times, be relatively minor.

VI ENVIRONMENTAL PROTECTION

i Air quality
Air quality is regulated in Australia at both the federal and state level.

The National Environment Protection (Ambient Air Quality) Measure was established in 1998. It aims to provide a common national goal to best protect human health and well-being from the adverse impacts of air pollution. It provides a consistent framework to assess Australia’s outdoor air quality by setting national ambient air quality standards for six common air pollutants as well as mandatory monitoring and reporting requirements against these standards for participating jurisdictions. Obligations under this Measure are generally assumed by governments rather than emitters.

On 15 December 2015, Australia’s federal and state environment ministers entered into the National Clean Air Agreement. The Agreement, implemented through the National Environment Protection Council, focuses on actions to reduce air pollution and improve air quality through cooperative action between industry and government at the national, state and local levels. Obligations under this Agreement are also generally assumed by governments rather than emitters. The initial focus of the Agreement will be to:

a introduce emission standards for new non-road spark ignition engines and equipment (such as garden equipment and marine outboard motors);
b adopt measures to reduce air pollution from wood heaters, including the adoption of new emission and efficiency standards for new wood heaters and sharing best management practices across jurisdictions; and
c strengthen ambient air quality reporting standards for particle pollution based on the latest scientific understanding of the health risks arising from airborne particle pollution.

At a federal level, the National Environment Protection (National Pollutant Inventory) Measure (NPI NEPM) sets out national objectives for protecting particular aspects of the environment, which may also affect air quality. More than 4,000 facilities from a wide range of industry sectors that exceed NPI reporting thresholds for the emission of NPI substances to air, land and water are required to report annually to relevant state or territory environment agencies under the NPI NEPM. This reporting enables the NPI to collate and disseminate data about emissions on a geographic, sectoral and facility level.

---
22 Carbon monoxide, nitrogen dioxide, photochemical oxidants (as ozone), sulphur dioxide, lead and particles (such as PM10 and PM2.5).
The federal government also regulates the manufacture, import and export of ozone depleting substances and synthetic GHG through the Ozone Protection and Synthetic Greenhouse Gas Management Act 1989 (Cth) and related acts and regulations. This framework is intended to assist Australia to meet its obligations under the Montreal Protocol.\footnote{The Montreal Protocol on Substances that Deplete the Ozone Layer.}

State and territory governments implement legislation, statutory instruments, policies and programmes in their own jurisdictions in order to meet the Ambient Air Quality NEPM standards and manage the collection of data under the NPI NEPM. For example, Victoria has adopted the State Environment Protection Policy (Air Quality Management) and the State Environment Protection Policy (Ambient Air Quality), which set standards for the discharge of major pollutants from sources including industrial premises with a view to controlling air pollution. The EPA monitors achievement of the ambient standards and encourages a range of measures to improve air quality such as promoting clean technology, discouraging open-air burning, using tall stacks to promote dispersion and reducing exhaust pollutants from vehicles.

State and territory governments also implement legislation, policies and programmes to meet their own individual goals in relation to air emissions such as via specific legislative provisions and licence conditions.

\textbf{ii Water management and water quality}

In Australia responsibility for water resources is primarily vested in the state and territory governments, however the federal government does exercise certain powers under the Water Act 2007 (Cth) in relation to the management of the Murray Darling Basin, which stretches across the eastern states of Australia, and in respect of water information and data collection. In most cases, there are separate regimes related to water management and water quality.

Water management legislation usually provides for:

\begin{itemize}
  \item[a] the preparation of water management plans for water resource areas\footnote{These include river catchments or groundwater aquifers.} to support the sustainable use of available water and protect environmental values of those ecosystems;
  \item[b] the grant of licences or other entitlements to take and use water for various purposes,\footnote{These include utilities, irrigation, mining, stock and domestic.} having regard to the availability of water at different times;
  \item[c] approvals for the construction of works to take and use water;\footnote{These include bores, pumps and pipelines.}
  \item[d] rules to facilitate trading of water entitlements; and
  \item[e] powers of regulators to investigate and enforce the legislation.\footnote{See for example, the Water Management Act 2000 (NSW) and the Water Act 2000 (Qld).}
\end{itemize}

Water quality issues are then separately regulated through pollution control legislation that creates offences for the pollution of water and sets water discharge limits and monitoring requirements through environment protection licences.

Victoria has adopted environmental quality objectives through its State Environment Protection Policy (Waters of Victoria) (SEPP). The SEPP sets the level of environmental quality required to protect aquatic ecosystems. If the objectives are not met, it signals a potential risk to the ecosystem, which is then investigated by the EPA using the risk-based approach.
In NSW, Section 120 of the POEO Act prohibits water pollution. The only defence is to establish that the pollution arose from a regulated activity and the requirements of that regulation were not contravened.\(^{28}\) There have been a number of recent cases in the NSW Land and Environment Court where companies have received significant fines for water pollution offences. These include a A$360,000 fine for a chemical company found guilty of discharging a number of hazardous chemicals into a pond that drained into a local waterway causing significant environmental harm;\(^{29}\) and a fine of A$187,500 to a water utility found guilty of water pollution and breaches of licence conditions resulting from fluoride and chlorine being discharged into a local creek.\(^{30}\) The EPA has also issued a number of A$15,000 penalty notices to companies for water pollution incidents during 2016, demonstrating a commitment to enforcing pollution prohibitions. Similar water pollution offences apply in other states and territories.

During 2016 the impacts of mining activities on groundwater availability and quality came into the spotlight in Queensland when the government introduced the Environmental Protection (Underground Water Management) and Other Legislation Amendment Act 2016 (Qld). This Act introduces a new requirement for resource sector operators (i.e., in the mining petroleum and gas sectors) to obtain an associated water licence for some projects and to carry out additional environmental impact assessment for site-specific environmental authority applications if they involve taking groundwater. Operators may also have ‘make-good’ obligations or requirements to enter into agreements with landholders if their activities impact upon groundwater availability.

iii Chemicals

The Federal Department is responsible for undertaking environmental risk assessments of industrial and agricultural chemicals for the National Industrial Chemicals Notification and Assessment Scheme (NICNAS) and the Australian Pesticides and Veterinary Medicines Authority (APVMA). The responsibilities of NICNAS derive from the Industrial Chemicals (Notification and Assessment) Act 1989 and include:

- assessing new industrial chemicals for health and environmental risks;
- maintaining the Australian Inventory of Chemical Substances (AICS);
- managing the Register of Industrial Chemical Introducers;
- compelling commercial importers and manufacturers to notify industrial chemicals that are new to Australia;
- providing information and making recommendations about chemicals to other government agencies responsible for the regulation of industrial chemicals; and

APVMA performs similar regulatory functions in relation to chemicals used solely for purposes relating to agriculture, gardening, pesticides, pool sanitisers, veterinary medicine and pets and livestock.

The Department is also responsible for managing Australia’s engagement with, and obligations under, international treaties relating to hazardous and persistent chemicals.

---

for example, gathering information about persistent organic pollutants and developing strategies to reduce or eliminate their use and environmental exposure in accordance with a National Implementation Plan.

Similar to air quality, the federal government has been cooperating with state and territory environment ministers in recent times to establish a National Standard for environmental risk management of industrial chemicals. A Draft National Standard was released for public consultation on 24 November 2016. The objects of the Draft National Standard are to:

a. achieve better protection of the environment through improved management of the environmental risks posed by industrial chemicals; and
b. provide a nationally consistent, transparent, predictable and streamlined approach to environmental risk management of industrial chemicals for governments, industry and the community.

Under the Draft National Standard, industrial chemicals are categorised as low, medium or high risk and broken into seven specified categories, or environmental schedules. Each of the environmental schedules has a set of outcomes-based risk management measures. Responsibility for managing the environmental risks of chemicals throughout their life cycle is then targeted at those who have the capacity to best manage them. This is intended to allow industry to manage risk efficiently and clearly separate regulatory responsibilities for government.

State and territory governments also play a role in managing the use and disposal of industrial chemicals. Certain activities involving the manufacture or use of chemicals may be regulated by EPAs and require environment protection licences to be held. Further, the disposal of certain chemicals will in most jurisdictions only be permissible at facilities licensed to receive them.

iv Solid and hazardous waste

The waste industry in Australia is highly regulated, primarily by state and territory governments through their EPAs.

At a federal level, legislation has been introduced to manage certain activities relating to hazardous waste, used packaging waste and promote product stewardship. The Hazardous Waste (Regulation of Exports and Imports) Act 1989 (Cth) regulates the export, import and transit of hazardous waste within and outside Australia. The Act was developed to enable Australia to comply with specific obligations under the Basel Convention on the Control of the Transboundary Movements of Hazardous Wastes and their Disposal.

The main functions performed by the Department in relation to hazardous waste include processing of export, import and transit permit applications under the Act; ensuring compliance and enforcement with the Act; and participating in domestic and international policy development under the Basel Convention.

The National Environment Protection Measure on Used Packaging Materials (the Australian Packaging Covenant) provides a framework where voluntary signatories make

31 In order to meet obligations related to chemical management under the Stockholm Convention on Persistent Organic Pollutants.
commitments to practise product stewardship throughout the life cycle of consumer packaging. This includes through the design of packaging to minimise the use of materials and eliminate excess packaging; adopting and implementing the Environmental Code of Practice for Packaging; supporting materials recovery systems; and reporting and demonstrating continuous improvement. ‘Brand owners’ of consumer products who do not sign up to the Australian Packaging Covenant and who have a gross annual income in Australia of A$5 million or more are required to comply with obligations to recover, reuse and recycle in accordance with targets set by relevant regulatory authorities. They are also required to prepare a waste action plan and to keep certain records. These obligations are imposed under environmental laws in each Australian state and territory and there are penalties for non-compliance.

Under the Product Stewardship Act 2011 (Cth) the life cycle of products, materials and industries can be regulated through voluntary approaches, co-regulatory approaches and mandatory obligations. To date, regulations have only been passed to support a co-regulatory approach for the recycling of televisions and computers. These regulations require liable parties to notify the Minister each year of how many products (identified by product code) in the class of products they imported in the financial year. Approved co-regulatory arrangements are then responsible for the collection and recycling of computers (usually an administrator). This usually involves providing access to collection services or sites. Voluntary approaches have been adopted for used tyres and mercury containing lamps.

At the state and territory level, most jurisdictions adopt an approach to waste management that looks at management options in the following order:

- avoidance;
- recovery (e.g., reuse, reprocessing, recycling); and
- treatment, contaminant and disposal.

By way of example, the NSW EPA has produced guidelines on waste avoidance and resource recovery under the NSW Waste and Resource Recovery Strategy 2014–2021 that prioritise avoidance as a primary measure, with measures then cascading into recycling, diverting waste from landfill, reducing litter and finally responsible disposal of waste.

Specific waste provisions in each state and territory generally regulate production and storage of some waste, transport, disposal and reuse of waste. In some circumstances an offence can be committed by a previous owner of waste if that waste is not disposed of properly by a contractor, unless the due diligence defence can be established.

Another increasing trend in Australian jurisdictions relating to product stewardship is the container deposit schemes (CDS). CDS have been introduced in South Australia (SA) and the Northern Territory (NT) and schemes are under development in NSW and Queensland.

The SA scheme was established in 1977 and is now administered under the state’s Environment Protection Act 1993. In 2011, the NT introduced a CDS under the Environment Protection (Beverage Containers and Plastic Bags) Act 2011. The SA and NT schemes follow the same design. Both schemes place a 10-cent refund on eligible beverage containers returned to collection points. Drink manufacturers are required to have a waste management plan for their containers. In practice, this requirement is met by manufacturers joining a ‘supercollector’, which runs a collection scheme on behalf of its member companies.

In NSW, the scheme will commence in 2017 and provides that anyone who returns an empty eligible beverage container to an approved NSW collection depot or reverse vending machine will be eligible for a 10-cent refund. A network of depots and reverse
v Contaminated land

There is no federal law that deals directly with contaminated sites, although there are a number of policy documents and guidelines that have influenced state laws. For example, the National Environment Protection (Assessment of Site Contamination) Measure (Site Contamination NEPM) aims to establish a nationally consistent approach to the assessment of site contamination. It provides guidance on determining whether contamination poses an actual or potential risk to human health and the environment, either on or off-site, sufficient to warrant remediation, having regard to current and future land uses.

While the Site Contamination NEPM is used by environmental consultants as a national standard, each state and territory in Australia regulates contaminated land independently. Western Australia and NSW are the only states that have legislation specifically relating to contaminated land, while the remainder of Australia’s states and territories regulate the issue in more general environmental protection and management acts and in subordinate legislation.33

Although different definitions are adopted, contamination is broadly described as ‘a condition of land or water where any chemical substance or waste has been added at above background level and represents, or potentially represents, an adverse health or environmental impact.’

Several states in Australia, including NSW, Western Australia, Victoria, Queensland and Tasmania, have a contamination register which the public can search for sites with known contamination. In general, these registers are not exhaustive. If a site is not listed in a register, this cannot be relied upon as conclusive evidence that the site is not contaminated, and conversely, nor will listing a site in the register automatically satisfy disclosure obligations.

Responsibility of persons for the clean up and remediation of contaminated land is expressed differently in each jurisdiction but will ordinarily start with the person causing the contamination and then cascade down to owners or occupiers of contaminated sites. In NSW, in determining the appropriate person to serve with a management order the EPA is, ‘as far as practicable’, to specify a person who is responsible for the contamination over the owner of the land or the notional owner of the land (such as a mortgagee in possession).

A similar principle applies in Western Australia, where the legislation establishes a hierarchy for determining responsibility of remediation, and allows for the transfer of that responsibility. In addition, in Western Australia if an owner or occupier has changed or proposes to change the use of all or part of the land, the owner or occupier will be liable for remediation of that land to the extent that the remediation is required because of the change.

---

33 The Contaminated Land Management Act 1997 (NSW); the Environment Protection Act 1970 (Vic); the Environmental Protection Act 1994 (Qld); the Contaminated Sites Act 2003 (WA); the Environment Protection Act 1993 (SA); the Environmental Management and Pollution Control Act 1994 (Tas); the Environment Protection Act 1997 (ACT) and the Waste Management and Pollution Control Act 1999 (NT).
To the extent that remediation is required because of the change of use, the person who caused or contributed to the contamination, as well as the state, are released from any liability they may otherwise have had.

In Victoria, there is a greater risk to owners and occupiers of land. The Victorian Environment Protection Authority may serve a notice directing the recipient to clean up the contaminated area and the person so directed need not necessarily be the person who caused the contamination. There is no hierarchy of responsibility and the notice may be served on the occupier. The definition of occupier includes a controller of premises, which may be an owner or a lessee and in certain circumstances can include a financial institution that is a mortgagee in possession.

Where contaminated land is being transacted, it is prudent to conduct investigations for potential contamination. In Western Australia, any transaction that will involve the sale, lease or mortgage of a site that has been classified as contaminated or possibly contaminated under the relevant legislation must include formal disclosure of the contamination at least 14 days before completion.

In Queensland, it was recently held that a vendor is required to give written notice to any buyer of land that has been classified as contaminated, even where the land is noted as contaminated on the state’s Environmental Management Register.

It is possible to provide contractually that the buyer accepts and undertakes clean-up requirements in some states. In Western Australia, responsibility for clean up can be transferred with a written agreement and with the approval of the Department of Environment and Conservation. Similarly, in South Australia and Tasmania, responsibility can be transferred to a purchaser if appropriate notices have been provided to the respective environment protection authorities. Conversely, in NSW for example, a contract cannot operate to transfer statutory liability for contamination under the Contaminated Land Management Act 1997, although indemnities can still provide contractual protection where appropriately drafted.

In our experience, a purchaser will only take on contractual responsibility for contamination for which it is not responsible if it has confirmed the level of contamination (if any) and has been compensated appropriately for taking on that liability (whether by direct payment or by adjustment of the purchase price).

VII CLIMATE CHANGE

Australia is a party to the UNFCCC and its Kyoto Protocol and in November 2016 ratified the Paris Agreement. Australia has submitted a Nationally Determined Contribution that commits Australia to reducing its GHG emissions to between 26–28 per cent below 2005 levels.

The policy measures intended to achieve this commitment include:
\[a\] the Australian Emissions Reduction Fund (ERF);
\[b\] the Safeguard Mechanism;
\[c\] the Renewable Energy Target;
\[d\] energy productivity measures; and
\[e\] fuel standards.

Under the ERF, eligible carbon abatement projects developed under the Carbon Credits (Carbon Farming Initiative) Act 2011 (Cth) are able to generate Australian carbon credit units (ACCUs), for purchase by the Clean Energy Regulator through periodic reverse auctions or
other competitive tendering processes. The federal government has pledged $2.55 billion to fund the purchase of ACCUs through the ERF in the period to 2018, and to date there have been four auctions of ACCUs.

The National Greenhouse and Energy Reporting Act 2007 (Cth) requires reporting on GHG emissions, energy production and energy consumption. In 2016 the federal government amended this Act to introduce the Safeguard Mechanism, which is designed to ensure that emissions reductions paid for through the ERF are not displaced by a significant increase in emissions elsewhere in the economy. The Safeguard Mechanism requires facilities whose net scope 1 emissions exceed the safeguard threshold of 100,000 tonnes of CO₂e to keep their GHG emissions at or below a set baseline based upon historical calculations.

Australia has also adopted a renewable energy target of over 23 per cent renewable energy by 2020, which is administered through the Renewable Energy (Electricity) Act 2000 (Cth). Finally, in December 2016 the federal government announced that it would look to introduce more stringent fuel standards in an attempt to bring Australian standards into line with those in Europe and to achieve Australia’s NDC goals. These draft standards will be the subject of public consultation in 2017.

A number of Australian states and territories have also adopted strong positions on renewable energy and climate change. The NSW Renewable Energy Action Plan sets out the framework for NSW to achieve its goal of net-zero emissions by 2050, and the NSW Climate Change Policy Framework sets out other key policy initiatives for NSW including the establishment of a Climate Change Fund. In June 2016, Victoria committed to renewable energy targets of 25 per cent by 2020 and 40 per cent by 2025 and in November 2016 the Victorian government proposed amendments to the Climate Change Act 2010 that include a 2050 net-zero emissions target, as well as requiring Adaptation Action Plans for systems vulnerable to climate change impacts. South Australia has renewable energy targets of 33 per cent by 2020 and 50 per cent by 2025 and also has a net-zero emissions target for 2050 which is set out in its Climate Change Strategy 2015. In Queensland, the renewable energy target is 33 per cent by 2030 and the state government is currently in the process of developing its Climate Transition Strategy, while the Australian Capital Territory has set a goal of 100 per cent renewable energy by 2020 under its Climate Change and Greenhouse Gas Reduction Act 2010.

VIII  OUTLOOK AND CONCLUSIONS

With Australia’s ratification of the Paris Agreement in November 2016, and the increase in ambitious state-based targets and strategies to address climate change throughout 2016, there is a high degree of anticipation in Australia for the realisation of ambitious environmental targets. In 2017 the Federal Department of Environment and Energy will undertake a Review of Australia’s Climate Change Policies, which aims to take stock of Australia’s progress in reducing emissions, and ensure that federal policies remain effective in order to achieve Australia’s 2030 target and Paris Agreement commitments.
I  INTRODUCTION

Environmental compliance and liability issues are now a part of everyday life for most businesses, irrespective of whether or not they are engaged in evidently hazardous activities. With a mass of new and changing law in this area, the boardroom has never had so many reasons to address environmental concerns.

Likewise, developments in the area of climate change are raising new challenges for the business community. As a result, regulatory demands on businesses are increasing together with issues of compliance. These compliance issues affect processes and products, as well as liabilities in business transactions.

This chapter provides a high-level overview of the main sources of environmental law in Belgium and outlines recent developments in relation to such law and the related case law.

II  LEGISLATIVE FRAMEWORK

As in each EU country, Belgian (and by extension regional) environmental law is based on the EU Treaty, and the implementing directives and regulations.

Following Belgian state reforms initiated in the 1980s, the three regions (i.e., the Brussels Metropolitan Region, the Walloon Region and the Flemish Region) have become almost exclusively competent for environmental matters (including enacting and enforcing rules on environmental permits, (onshore) renewable energy, etc.).

The federal authority remains competent for certain limited areas (e.g., issues relating to workers’ exposure to asbestos, radioactive substances, offshore renewable energy).

Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (IED) sets out the main legislative framework at
Belgium

EU level in relation to permitting requirements. Its aim is to minimise pollution from various industrial sources. Operators of industrial installations covered by the IED must obtain an integrated permit from the local competent authorities. The IED has been transposed and integrated into the existing regional permitting system in Belgium.

The Flemish Environmental Permit Statute of 28 June 1985 (FEPS) covers the operation of commercial or industrial facilities, effluent discharge, waste storage and disposal, and groundwater-threatening activities. Under this regime, installations, workshops, appliances, production methods or products that are classified as hazardous, harmful or unhealthy may not be set up, operated, changed, transferred or used without an environmental permit.

The FEPS and its implementing decree of 6 February 1991 divide the listed facilities into three categories: 1, 2, and 3. Class 3 facilities do not need a permit. Operation of these facilities must only be notified to the local authorities. Class 2 facilities require a permit from the local authorities, whereas a Class 1 facility must be authorised by the provincial government.

It is anticipated that the FEPS will replace by the Flemish Statute of 25 April 2014 concerning the integrated permit, which will amend the current permitting system and provide for a single permit, covering both the urban planning and environmental aspects in the case of a mixed project. Relevant changes will include, among other things, the simplification and acceleration of the permit application procedure, the validity term of the integrated permit (which will, in principle, be granted for an indefinite term like the current urban planning permit), and enhanced digitalisation of the permit procedure. At the time of writing, it is anticipated that the rules governing the integrated permit will enter into force in February 2017.

The Brussels Environmental Permit Statute of 5 June 1997 (BEPS) states that installations, workshops, appliances, production methods or products that are classified as hazardous or harmful to the environment or health may not be set up, operated, changed, transferred or used without first obtaining a permit from or giving advance notification to the appropriate authority. The BEPS classifies these installations into four categories: Class 1A, 1B, 2 and 3.

Class 3 activities do not require a permit, only advance notification to the Council of Mayor and Aldermen of the relevant municipality. For Class 2 activities, permits are required and granted by the College of Mayor and Aldermen and for Class 1A and Class 1B activities, permits are required and granted by the Brussels Institute for Environmental Management (BIM/IBGE).

The Walloon Environmental Permit Statute of 11 March 1999 (WEPS) also covers the operation of industrial facilities, effluent discharge, waste storage and disposal and groundwater-threatening activities.

The WEPS classifies the listed facilities into three classes. Class 3 operations do not need a permit. The operation of Class 3 facilities must merely be notified to the local authorities. Class 2 and Class 1 operations require a permit from the local authorities. The authorities may impose general or specific operating conditions in the permits. These conditions are binding on the operator of the equipment.

In Belgium, greenhouse gas permit requirements are integrated into the environmental permit regime. Greenhouse gas facilities must participate in the emissions trading scheme and must submit annual emissions allowances covering their carbon dioxide emissions (for more detailed information see Section VII, infra).
III THE REGULATORS

In some areas, the national or federal enforcement agencies align their actions with the priorities and approaches set by their European counterparts (e.g., through the ROHS enforcement network or as part of the prioritisation programmes set by the REACH Forum for Exchange on Information on Enforcement, under the auspices of the European Chemicals Agency).

In other areas, the picture is less coherent: local municipalities can address environmental violations under the regional environmental permit regulations. In addition, regional enforcement authorities may impose (monetary) sanctions or other measures, which may vary depending on the type of violation and the relevant region.

Enforcement authorities very often tend to set deadlines for companies to comply and may only resort to enforcement (including repealing or suspending permits, imposing administrative sanctions, starting criminal proceedings), when a company does not comply with repeated warnings.

Administrative acts (such as a permit refusal or a modification of permit conditions) may often be appealed to the higher administrative authority. Following such administrative appeal, the applicant or any third party may appeal the final decision of the administrative authority to the designated court body (which is in most cases the Belgian State Council). For a long time the State Council only had the authority to suspend or annul the decision of the administrative authorities. In 2014, the procedural rules changed to allow the State Council to amend a decision, to impose provisional measures, to limit the consequences of an annulment and to suggest how an illegality could be corrected or how an ‘administrative loop’ could be used to allow the permit-granting authority to remedy any procedural defects. The provision dealing with the ‘administrative loop’ was annulled by the Belgian Constitutional Court in its judgment (No. 103/2015) dated 16 July 2015.

IV ENFORCEMENT

Different types of liabilities and enforcement actions exist.

Permit-granting authorities and enforcement agencies may impose administrative sanctions (including the temporary suspension of permits, the withdrawal of permits or the imposition of administrative sanctions including monetary sanctions or other remedial actions).

Most, if not all, environmental breaches are subject to criminal sanctions – each of the three regions has adopted a wide variety of criminal sanctions associated with all possible types of environmental violations and breaches. Criminal proceedings may be commenced directly by the Public Prosecutor or by a third party, who may seize the instructing judge to commence criminal proceedings.

Companies may be subject to summary procedures. In general, any party who fears imminent damage (whether or not on the basis of a breach) may start proceedings before the civil courts to obtain an injunction or compensation. Moreover, under a federal law dated 12 January 1993, the Prosecutor, NGOs and local municipalities (or individual citizens acting on behalf of their municipalities) may bring a claim to suspend works where there is an imminent threat to the environment.

Finally, environmental breaches can give rise to claims for damages in civil courts. In such cases, the plaintiff will have to prove that a contractual breach has been committed by
the site owner, that the plaintiff has suffered damage and that there is a causal link between the breach and the damage suffered or alternatively, that the site owner has committed a wrong or negligent act (or an omission).

The types of defences available to a site owner depend largely on the factual circumstances and the type and nature of the alleged breach. Two important points are worth mentioning in this respect:

Proving that the site owner has committed a wrong or has acted negligently will require a plaintiff to prove (1) that a site owner breached a specific obligation (as provided for in a specific law or regulation), or (2) that a site owner has not complied with the 'general duty of care'. This ‘duty of care’ requirement will require a court to scrutinise whether an operator has acted as a reasonable operator would have done in similar circumstances – in such case, discussions will revolve around the level and nature of the best available technologies (BAT) used.

Invoking the time bars under the statute of limitations is, especially in more complex pollution or waste cases, an important defence for a site owner. Under Belgian civil law, any civil action will be time barred five years after the occurrence of the damage or knowledge of the occurrence of the damage (or knowledge of the identity of the perpetrator) and will be time barred in any event 20 years after the generating event. Especially in cases of gradual pollution, the 20-year time bar is a powerful defence for a site owner. In that respect, plaintiffs have tried to circumvent the prescription period by claiming that some of the violations (e.g., the abandoning of waste) are in fact continuous (criminal law) violations, so that the 20-year term simply cannot start.

V REPORTING AND DISCLOSURE

All three regions have a specific transfer of land regime requiring a transferor to not only provide information on the state of the soil and groundwater, but also soil surveys and, post-bond, the completion of remedial action; effectively limiting the risk that buyers would become responsible for the clean-up of pollution that they did not cause or that they were not aware of.

In the Flemish Region and the Brussels Metropolitan Region, these protective regimes are triggered by a number of corporate and asset transactions (including mergers and the creation, assignment or transfer of in rem rights), but not by a share transfer (unless in the case of a merger or a transfer of a branch).

In the Walloon Region, a similar regime is anticipated in the current statute, but its key article (listing the triggering events) has – at the time of writing – not yet entered into force (and is unlikely to enter into force in its current form). It is anticipated that the existing statute will be amended, and that the transfer of rights in rem will no longer be automatically considered to be a triggering event (but will give rise to certain information obligations), but so far there has been no confirmation of the exact timing of the adoption of these amendments.

Outside the framework of the transfer of land rules, as part of civil tort rules, every operator has a duty to limit damage to third parties. Consequently, if an operator is aware of offsite migration that could cause harm or damage to a third party, it will be held liable for not disclosing or warning those third parties of such pollution if this causes effective damage to those third parties.
There are no specific laws or regulations protecting whistle-blowers who report environmental violations to the competent authorities.

VI ENVIRONMENTAL PROTECTION

i Air quality
In the three regions, air emissions are regulated under the integrated environmental permitting regime and permits are issued by the local or regional authorities (see Section II, supra). Depending on the type of industry concerned, general or specific air emission standards may apply, as well as related monitoring or reporting obligations.

ii Water quality
In the three regions, an environmental permit is required for wastewater discharge that exceeds certain thresholds or parameters. These permits are issued by local or regional authorities and the applicable thresholds or parameters depend on the type of activities concerned.

Before the (integrated) environmental permitting regime entered into force, the regulatory framework was less coherent and separate water discharge permits were required for certain activities.

iii Chemicals
The use, storage and handling of chemicals or other hazardous substances is strictly regulated in the three regions, and specific environmental permit conditions may be imposed on site operators in order to prevent spillages, leakages or other environmentally damaging incidents or accidents.

In the case of non-compliance issues or imminent danger to humans or the environment, authorities have a wide range of powers available to ensure compliance or prevent such danger (including, without limitation, the possibility to perform testing, and require operators to implement protective measures or temporarily cease activities).


Depending on the roles companies have under REACH, they may be subject to registration obligations, authorisation requirements, restrictions or other obligations (such as information duties).

Under REACH, manufacturers and importers must register substances (on their own, in mixtures, and in certain cases, in articles) by submitting a registration file to the European Chemicals Agency. Such registration is based on the ‘one substance, one registration’ principle, which means that manufacturers and importers of the same substance must submit a joint registration dossier, and may be subject to data-sharing obligations.

For substances that were already manufactured or placed on the market before REACH entered into force (so-called ‘phase-in’ substances), a special, transitional regime
Belgium

applied, provided that companies had filed a pre-registration with the European Chemicals Agency by 1 December 2008. In relation to these substances, the following registration deadlines apply:

a. 30 November 2010 for registering substances manufactured or imported at 1,000 tonnes or more a year; substances that are carcinogenic, mutagenic or toxic to reproduction above 1 tonne a year; and substances dangerous to aquatic organisms or the environment above 100 tonnes a year;

b. 31 May 2013 for registering substances manufactured or imported at 100 to 1,000 tonnes a year; and

c. 31 May 2018 for registering substances manufactured or imported at 1 to 100 tonnes a year.

Under the authorisation process, substances of very high concern (SVHCs) may be included in the authorisation list and become subject to authorisation. This means that these substances may not be placed on the market or used after a certain date unless an authorisation is granted for their specific use or if the use is exempted from authorisation. Manufacturers, importers and downstream users of a substance on the authorisation list may apply for an authorisation.

Restrictions may limit or even prohibit the manufacture, placing on the market or use of a substance (on its own, in a mixture or in an article, even if the substance does not require registration).

The enforcement of REACH is the responsibility of the individual Member States. In Belgium, both the federal authorities and the regional authorities are competent for ensuring compliance with certain aspects of REACH. Although the European Chemicals Agency has no enforcement responsibilities, it hosts a special forum, the Forum for Exchange of Information on Enforcement, which aims to coordinate enforcement actions between the various Member States.

The European Chemicals Agency also plays an active decision-making role under REACH. Some (but not all) of its decisions may be challenged before a designated body, the Board of Appeal.

iv Solid and hazardous waste

Waste disposal in Belgium is heavily regulated and each person in the waste chain involved in the disposal of waste has a specific responsibility to comply.

These regulations cover a variety of different products and require producers and importers to ensure that their products are safely disposed of at the end of each product's life. This includes electrical and electronic goods, packaging, batteries and vehicles. Legislation on electrical and electronic goods also requires the phasing out of certain hazardous substances from this equipment.

Environmental legislation imposes criminal liability for the failure to dispose of waste lawfully (including meeting requirements to dispose of waste to properly regulated waste disposal companies). However, if a company discharges lawfully, it will not be held liable for breaches by others at a licensed site.

v Contaminated land

Regional soil legislation sets out the situations in which soil surveys must be carried out (e.g., on the transfer of a site, or the application for an environmental permit). If the soil surveys show that the thresholds for soil or groundwater pollution set out in the soil legislation...
have been exceeded, remediation will have to be carried out by the party responsible for the clean-up (CRP) identified in the relevant soil legislation. In all three regions, the CRP will be one of the following persons, generally in the following order of priority: (1) the person who caused the pollution, if that person can be clearly identified; (2) the operator of the site (exploitant); or (3) the holder of a right in rem (e.g., the landowner or the long-term leaseholder).

In the Brussels Metropolitan and Walloon Regions, the clean-up regimes may identify multiple CRPs at the same time (but, as explained under Section V, supra, the clean-up regime in the Walloon Region has only partially entered into force).

In the Flemish Region, clean-up laws provided for a phased mechanism for determining the CRP (i.e., first the operator, then the user and finally the owner could be held responsible for remedying any pollution caused on its land). A partial exemption from remediation obligations was not possible, even if any of these persons fulfilled the exemption requirements for part of the pollution. By virtue of the Statute dated 28 March 2014, a new mechanism was introduced, allowing a CRP responsible for remediation to obtain a (partial) exemption from remediation obligations. In the event of such a partial exemption, part of the remediation obligations may pass on to the next person in the cascade system. When all three persons (i.e., the operator, user and owner) are partially exempt from responsibility for the pollution, the Flemish Waste Agency may carry out remediation obligations ex officio in relation to the rest of the pollution.

VII CLIMATE CHANGE

In Belgium, policies and measures to reduce greenhouse gas emissions are mapped out at different levels based on the division of powers between the federal government and the three regions. Each level establishes its own environmental and climate policy priorities, but coordination bodies have been set up to harmonise the policies and measures implemented by the different levels.

These measures include the establishment of climate policy plans, financial incentives (e.g., for electricity generation from renewable energy sources and the rational use of energy in certain sectors) and the imposition of energy and indoor requirements for certain buildings.

In relation to climate change policy plans, greenhouse gas permit requirements are included in the environmental permit regime. As of February 2017, they will in principle be included in the single integrated permit (see Section II, infra). Greenhouse gas facilities must participate in the emissions trading scheme and must submit annual emissions allowances covering their carbon dioxide emissions.

Under certain conditions the emissions trading system provides for the free allocation of emission allowances. For the emission trading periods 2005 to 2007 and 2008 to 2012, Belgium had to submit a national allocation plan to the European Commission for its approval.


For the period 2013 to 2020, the free allocation of emission allowances will no longer be based on national allocation plans but will be determined by the European Commission
on the basis of ‘ex ante benchmarks’ laid down in a Commission decision of 27 April 2011 (determining transitional Union-wide rules for the harmonised free allocation of emission allowances pursuant to Article 10a of Directive 2003/87/EC of the European Parliament and of the Council). In accordance with this 2011 decision, the Member States have notified ‘national implementation measures’ (NIMs) to the Commission (i.e., a preliminary calculation of the number of free allowances to be allocated).

On 5 September 2013, the Commission took a decision (Commission Decision concerning national implementation measures for the transitional free allocation of greenhouse gas emission allowances in accordance with Article 11(3) of Directive 2003/87/EC of the European Parliament and of the Council) on the NIMs for the transitional free allocation of greenhouse gas emission allowances (the 2013 Commission Decision), and accordingly calculated the maximum free allowances (i.e., the industry cap) and a correction factor. According to the 2013 Commission Decision, the cross-sectoral correction factor was set at approximately 92.6 per cent for 2014 and will gradually decrease to 82 per cent in 2020. This cross-sectoral correction factor was declared invalid by the European Court of Justice in a judgment dated 28 April 2016. In its judgment the European Court of Justice ruled that the European Commission has 10 months (i.e., until March 2017) to recalculate the cross-sectoral correction factor.

On the basis of the 2013 Commission Decision, the competent authorities could and have taken final allocation decisions and issued free allowances. For now, these decisions remain in effect until the European Commission has recalculated the cross-sectoral correction factor.

VIII OUTLOOK AND CONCLUSIONS

It is anticipated that the environmental permitting landscape in the Flemish Region will change drastically in the course of 2017, as the current legislative framework will be amended and replaced by the Flemish Statute of 25 April 2014 in relation to the integrated permit. This integrated permit will provide for one single environment permit covering both urban planning and environmental aspects. The new rules aim to simplify and accelerate the permit application process and will extend the validity period of environmental permits.

In relation to the Walloon Region, the key provision of the Walloon Soil Statute (which lists the triggering events for carrying out a preliminary soil survey) has not yet entered into force and is unlikely to enter into force in its current form. It is thought that the existing statute will be amended, and that the transfer of rights in rem will no longer automatically be considered to be a triggering event but will give rise to certain information obligations. However, the timing of these amendments is currently still unclear.
I INTRODUCTION

Brazil has a vast set of environmental laws regulating activities of project developers. This special care for the environment is due to the fact that the environment in Brazil is classified as a common asset, essential for a good quality of life. The Federal Constitution of 1988, in its Article 225, mandates society to maintain an environment conducive to the healthy life of this and future generations. With the sustainable development principle in mind, project developers must respect the environmental laws and treaties in force in Brazil, under sanctions of criminal and administrative liability, notwithstanding the obligation to repair or indemnify the environmental damage caused. One of the most important and most used mechanisms to achieve sustainable development is the environmental licensing of polluting or potentially polluting activities. The issuance of an environmental licence is mandatory for the construction, installation, enlargement, modification and operation of potentially polluting activities or facilities. Licences are always valid for a specific term and their effectiveness depends on compliance with the technical conditions previously established, which may vary according to the activity and the facility.

II LEGISLATIVE FRAMEWORK

The Federal Constitution, enacted in 1988, has followed the guidelines established by National Environmental Policy, outlined in Federal Law No. 6,938/81. The National Environmental Policy aims to preserve, improve and recover the environmental quality conducive to life, aiming to ensure the conditions for socio-economic development, the interests of national security and the protection of the dignity of human life. Also worth mentioning is Federal Law No. 9,605/1998, which provides for criminal and administrative liability for environmental damage.
sanctions derived from conducts and activities harmful to the environment, and Federal Decree No. 6,514/2008, which provides for administrative infractions and sanctions for the environment and establishes the federal administrative process for the determination of these infractions. States that do not have their own standard for the determination of infractions and sanctions are using the federal regulation in a subsidiary manner. Another important piece of legislation is Federal Law No. 12,651/2012, which establishes the Brazilian Forestry Code. This Law provides general rules on vegetation protection, specially protected areas (such as Permanent Preservation Areas and Legal Reserve Areas), forest exploitation, supply of forest raw material, control of the origin of forest products and control and prevention of forest fires and also provides economic and financial instruments to achieve its objectives. Also regarding specially protected areas, Brazil enacted Federal Law No. 9,985/2000, which establishes the National System of Nature Conservation Units and establishes criteria and rules for the creation, implementation and management of these conservation units. Other national policy acts, such as the National Water Resources Policy (Federal Law No. 9,433/1997), the National Waste Policy (Federal Law No. 12,305/2010) and the National Policy on Climate Change (Federal Law No. 12,187/2009) are also important and will be further discussed in relation to specific topics below.

III THE REGULATORS

According to Supplementary Law No. 140/2011, the environmental agency entitled to issue licences will also be responsible for inspection, supervision and application of administrative penalties. The Supplementary Law also establishes that the federal environmental agency, the Brazilian Institute of the Environment and Renewable Natural Resources (IBAMA), has the authority to conduct environmental licensing proceedings in a number of cases described therein, such as offshore activities and nuclear power plants, among many others, and is also responsible for the inspection and sanctioning of the environmentally harmful aspects of these activities or those that contradict environmental laws. Municipal environmental agencies have jurisdiction to license facilities and activities limited to producing local impacts that may occur within the municipalities. Therefore, state environmental agencies have general jurisdiction over the environmental licensing proceedings of facilities and activities not encompassed by federal or municipal jurisdictions.

Regarding water resources considered as being of federal scope, the National Water Agency (ANA) is responsible for issuing grants for the use of water resources, and is also responsible for ensuring the correct use and maintenance of quality of the federal water resources. The proposal, implementation, management, protection, supervision and monitoring of Federal Conservation Units is a duty of the Chico Mendes Institute of Biodiversity Conservation (ICMBIO). The environmental licensing proceeding in Brazil, whenever the project affects indigenous areas, may also involve the participation of the National Indigenous Foundation (FUNAI). Respectively, the National Historic and Artistic Heritage Institute (IPHAN) may be involved when archaeological or cultural assets are affected. In addition to the environmental agencies, federal and state public prosecutor’s offices have a prominent role in the development of environmental matters, overseeing compliance with legislation by means of civil investigations, public class actions and criminal lawsuits.
IV ENFORCEMENT

Any incident or violation of environmental laws may potentially give rise to civil, administrative and criminal liabilities. As mentioned above, the federal and state public prosecutor’s offices are the main (in the case of criminal lawsuits, they are the only) entities with standing to file lawsuits to secure the environment or restore environmental damage. In this regard, public civil action is the lawsuit used in the civil sphere to force individuals and legal entities (companies and even environmental agencies, in the case of omission as to the duty to supervise) to compensate or remediate damages caused to the environment and third parties, regardless of the existence of fault. Despite the majority action of the federal and state public prosecutor’s offices in these cases, Federal Law No. 7,347/1985 lists several entities with standing to file public civil action. Directors and officers of a company that caused environmental damage may be held liable for civil liability when acting with proven negligence or wilful misconduct, and when they were also shareholders. Aesthetic harm to public assets is also considered environmental damage.

Indemnification (or compensation) and repair of environmental damage are distinct concepts, but both are applicable to the mitigation of environmental damage. Repair is understood as the act of recovering the environment to its original state, prior to the damage. Indemnifying is the act of financially compensating a harm, when the damage is such that the environment cannot be recovered to its original state. The fact that a wrongdoer’s activity is permitted by an environmental licence does not exclude the obligation to repair or compensate damages, that is, the lawfulness of the activity does not preclude the right of legitimate parties to request indemnification or compensation. According to a well-established trend in Brazilian case law, the compensation or indemnification of an environmental damage is not subject to statutes of limitation. Also, according to Federal Law No. 9,605/1998, the disregard of the corporate entity will be admitted whenever the corporate entity becomes an obstacle to the recovery of environmental damages. In this context, the corporate veil of a legal entity may be pierced whenever such entity becomes an obstacle to the recovery of environmental damages, including (but not limited to) its financial incapacity for such recovery.

In the criminal sphere, the entity with standing to file a criminal lawsuit for environmental violations is the public prosecutor’s office, federal or state. The applicable penalties shall be related to restricting rights, such as temporary suspension of rights, partial or total suspension of activities, and it can also lead to fines and prohibitions on executing contracts with government as well as fines for legal entities, detention or imprisonment for individuals, among others. Officers, directors, managers or agents of a legal entity may be subject to criminal penalties, such as confinement or imprisonment. However, case law has also established that solely the condition of being a director or officer does not by itself authorise the initiation of an environmental criminal investigation, as an element of wilful misconduct or gross negligence is necessary.

The administrative liability regime establishes that an action or omission may be punishable. At the administrative level, the environmental agencies responsible for the licensing of the activity are also responsible for sanctions applied for non-compliance with environmental legislation; however, in practice, the federal environmental agency is still inspecting activities with a broader scope. The possible penalties are warnings; fines (in the federal level, ranging from 50 up to 50 million reais); suspension of sale and manufacture of products; and partial or total suspension of activities, among others. The administrative infractions on the federal level are discussed in Federal Law No. 6,514/2008; see Section II, infra. Unlike the civil liability regime, an element of negligence or wrongful misconduct is
essential to configure a criminal or administrative violation. Wrongdoers are always allowed to challenge these measures in the judiciary branch and may allege a lack of damage or lack of wilful misconduct or gross negligence whenever applicable.

Over the last few years, we have noticed the need for specialisation in the many peculiarities of litigation issues applicable to environmental matters. We came to acknowledge that experience in leading and complex cases usually grants lawyers the expertise to support their clients with specifically tailored services according to their needs. As environmental issues are unique and dynamic, an understanding of traditional dispute resolution matters is not enough to assist clients in connection with their businesses. Court trends are repeatedly pointing out that formal issues are not as important as they used to be, which is the reason any conflict resolution must take into consideration the material grounds of the case (merit).

Finally, we foresee that environmental litigation will evolve in Brazil as a more efficient system of conflict resolution is developed, mainly for those cases involving multiple stakeholders – either as claimants or defendants. In many cases, the Public Action Law, established in 1985, has not been shown as an effective legal remedy to address certain environmental complex conflicts. Thus, alternative methods such as mediation shall be taken into consideration by the competent authorities (prosecutors and judges) to help address complex social, economic and environmental matters.

V REPORTING AND DISCLOSURE

In the federal sphere, there is no obligation established in the law that requires the immediate communication to an environmental agency on environmental violations. Nevertheless, it is usually recommended to inform the existence of any damage or violation, as cooperation with the environmental agency is considered as an extenuating circumstance in the application of criminal or administrative sanctions. Federal Law No. 9,605/1998 establishes that the cooperation with the agents in charge of environmental monitoring and control should mitigate the administrative penalty and the penalty imposed in criminal matters. Nevertheless, in cases of oil spills, entrepreneurs are obligated to immediately inform the competent authorities. In addition, pursuant to CONAMA Resolution No. 420/2009, the existence of risks to human health by means of a contaminated area obligates entrepreneurs to inform legitimate authorities.

Although not nationally consolidated, in the state of São Paulo, for instance, State Decree No. 59,263/2013, which provides guidelines and procedures for the protection of soil quality and the management of contaminated areas, provides that, from the moment that evidence or suspicions of contamination are identified, legal representatives must immediately notify the state environmental agency and the municipality responsible, which must express its opinion on the need to stop activities in progress and require the completion of a confirmatory investigation. Nevertheless, there is no way of easing the obligation to repair or compensate environmental damage caused in this matter, nor is there any kind of amnesty for whistle-blowers.
VI ENVIRONMENTAL PROTECTION

i Air quality

Air quality standards in Brazil are regulated by the National Council for the Environment (CONAMA), by means of the CONAMA Resolution No. 03/1990. Air quality standards are concentrations of atmospheric pollutants, which, if exceeded, could affect the health, safety and well-being of the population, as well as damage flora and fauna, materials and the environment in general. It is important to note that the Resolution does not specify the limits of air pollution to each activity individually, adopting general standards widely applied. Nevertheless, states are allowed and encouraged to enact their own regulations to impose standards on air emissions. According to the Environmental Crimes Law (Federal Law No. 9605/1998), the act of causing atmospheric pollution at levels that result or may result in damage to human health, or that cause the death of animals or significant destruction of flora may result in imprisonment from one to four years and a fine. If air pollution causes the reallocation, even momentary, of inhabitants of an affected area, penalty is imprisonment from one to five years and a fine.

In the scope of the administrative liability regime, Federal Decree No. 6,514/2008 provides that the act of causing atmospheric pollution is subject to a fine ranging from 5,000 to 50 million reais. The control of air emissions is provided as a technical requirement in environmental licensing. Therefore, if the level of emissions exceeds the standard established in the licence, the wrongdoer may be subject to administrative penalties for non-compliance with conditions established in the environmental licence, such as warnings, fines ranging from 500 to 10 million reais and an even embargo on the activity, depending on the seriousness of the infraction.

ii Water quality

Federal Law No. 9,433/1997, which established the National Policy on Water Resources, establishes that the use of water resources is subject to the granting of the right of use, either for the extraction from a water body (even for human consumption), or for the discharge of effluents. The issuance of the right to use water resources is defined based on the dominance of the water resource used, being performed by federal or state entities. Federal water resources are lakes, rivers and any streams of water on land in their domain, or that span more than one state, serve as boundaries with other countries, or extend to or from foreign land, as well as marginal lands and river beaches. In these cases, the authority to issue the grant is ANA. The water quality is also disposed by CONAMA Resolutions No. 357/2005 and 430/2011, rules that provide the classification of water bodies and environmental guidelines for its framework, as well as establish conditions and standards for effluent discharge on water resources. According to the National Policy on Water Resources, the execution of hydraulic works and services, derivation or use of water resources of domain or administration of the Federal Union without the respective grant of the right to use water resources is considered an administrative violation. Such conduct entails the application of penalties, including warnings, fines ranging from 100 to 10,000 reais, in addition to temporary or definitive embargoes.

iii Chemicals

According to IBAMA Normative Instruction No. 05/2012, maritime and interstate highway transport activity of dangerous products depends on the issuance of an environmental
authorisation for the transport of dangerous products, issued by IBAMA. This means that maritime transportation and interstate transportation (by land and river) of dangerous products must be followed by this document.

In addition, individuals or entities that develop the activity within the boundaries of one unit of the Federation must follow the licensing or environmental authorisation rules for the transportation of dangerous products established by the respective state environmental agency. In other words, states are also entitled to impose their own regulations on the usage and transportation of chemical and dangerous products.

According to Federal Decree No. 6,514/2008, producing, processing, packaging, importing, exporting, marketing, supplying, transporting, storing or using a product or substance that is toxic, dangerous or harmful to human health or the environment, without complying with the requirements established by laws or regulations, can lead to fines ranging from 500 to 2 million reais.

iv Solid and hazardous waste

The National Policy on Solid Waste, established by Federal Law 12,305/2010, aims to set principles, instruments, guidelines, goals and actions to enable the integrated management of waste, except radioactive waste, which is regulated by specific legislation. The concept of waste management follows the order of priority of non-generation, reduction, reuse, recycling, treatment and environmentally appropriate disposal. One who generates waste in its industrial process is therefore responsible for its segregation, storage, transportation and final disposal, and may be required to repair any kind of environmental damage therein related. By means of the concept of shared responsibility, instituted by the National Policy on Solid Waste, tasks and costs involved in the different stages of solid waste management are distributed throughout the production chain to the extent of liability of each of the parties involved. Therefore, although the liability for repairing damages to the environment in the civil sphere is joint and several, which means regardless of factual fault, management of waste also observes this distribution of burden among its product chain.

By means of the civil liability regime, hiring third parties to perform any of the phases of solid waste management, such as the environmentally appropriate final disposal, does not exempt the contractor from being held liable to repair or indemnify for environmental damage. The same imposes a reverse logistics system, which consists of an instrument characterised by a set of actions, procedures and means to enable the collection and restitution of solid waste to the business sector, for reuse, in their cycle or other productive cycles, or other environmentally appropriate disposal. The reverse logistics system applies to manufacturers, importers, distributors and traders of pesticides, batteries, tires, lubricating oils, packaging, lamps, and electronic products. Therefore, these agents are obligated to structure and implement mechanisms to return the residues of these products after their use by consumers for reuse in the production process or other environmentally appropriate disposal.

According to Federal Decree No. 6,514/2008, anyone who causes pollution by means of improper waste management may be subject to a fine of up to 50 million reais. In the criminal sphere, according to Federal Law No. 9,605/1998, one who causes pollution may be subject to imprisonment from one to four years.

v Contaminated land

Contamination of soil and groundwater triggers environmental liabilities and, as already highlighted above, any legal claim for reparation or indemnification of an environmental
damage is not subject to any statutes of limitation. Contaminated areas are classified as areas where there is evidence of pollution caused by disposal, accumulation, storage or infiltration of substances or residues, implying negative impacts on soil or groundwater. The detection of contamination requires actions by governmental agents, entities that caused contamination and previous or current owners. In this regard, corrective measures should be applied in order to establish levels of quality compatible with a certain future use. At the federal level, CONAMA Resolution No. 420/2009 provides criteria and guiding values of soil quality for the presence of chemical substances and establishes guidelines for the management of contaminated areas as a result of human activities.

According to Brazilian environmental legislation, the owner and possessor of a contaminated site may, regardless of factual fault, be held liable and compelled to perform the remediation and recovery of the environment. In other words, environmental liability for contaminated areas follows the general rule in which the violator may be held liable regardless of fault (joint and several liability regime), as well as the propter rem obligation (attached to the property). Parties can contractually allocate such liability by means of private agreements, but contractual provision does not affect their liability in relation to public authorities on public civil actions. Nevertheless, private contracts can only direct the discussions on the right of redress among them.

As stated previously, causing pollution of any kind that results or may result in damage to human health by means of a contaminated area is considered an administrative violation punishable by fines of up to 50 million reais in the administrative sphere, notwithstanding the criminal liability in which individuals may be imprisoned from one to four years.

VII CLIMATE CHANGE

Brazil is a party to the United Nations Framework Convention on Climate Change (UNFCCC) and is also a signatory to the Kyoto Protocol, but no direct reduction goals for the country have been established. Brazil performed a leading role in the trading of allowances derived from clean development mechanisms, registering more than 2,500 projects during that period and also enacted its own National Policy on Climate Change (Law No. 12,187/2009), national main legislation that has established a voluntary commitment to achieve a greenhouse gas emissions reduction of between 36.1 and 38.9 per cent by 2020. Several Brazilian states have also enacted their own state policies. Markets in the trade of carbon allowances within the country are in operation; however, at present these are just minor initiatives. The new UNFCCC international climate change agreement (the Paris Agreement), which was signed by Brazil in December 2015, shall boost initiatives from public authorities, expand local markets, stimulate mitigation and adaptation measures and also relevant funding mechanisms. The effectiveness of the Paris Agreement requires the enactment of a legislative decree, which was recently approved by the Brazilian Congress, ratified by the President and published in the Official Gazette. Local environmental agencies are expected to be the relevant entities to inspect and to control the reduction of carbon emissions. The monitoring and reporting of greenhouse gas emissions is a new technical requirement in the environmental licensing process routine. Project developers that contribute on a relevant basis to greenhouse gas emissions are normally required to present inventories, quality reports and, in certain cases, provide the installation of eco-efficient equipment. Standards and limits on greenhouse gas emissions for industrial activity are also applicable. Therefore, if the activity fails to comply with greenhouse gas monitoring conditions, the wrongdoer may be subject to administrative
penalties for non-compliance with conditions established in the environmental licence, such as warnings, fines ranging from 500 to 10 million reais and even embargoes on the activity, depending on the seriousness of the infraction.

VIII OUTLOOK AND CONCLUSIONS

Over the past years, several developments have progressed in Brazilian environmental laws, such as: (1) the National Policy on Climate Change in 2009, which established, as a voluntary commitment, the goal to achieve a greenhouse gas emissions reduction of between 36.1 and 38.9 per cent by 2020 – which now is expected to be reviewed due to the recent Paris Agreement and the Brazilian NDC (nationally determined contribution); (2) the National Solid Waste Policy in 2010, which imposed the shared responsibility regime and provided take-back obligations; (3) the New Forestry Code in 2012, which established a new regime for specially protected areas, being implemented by means of a new online registry bound to cover all rural properties in Brazil; and (4) the New Biodiversity Law in 2015, which seeks to simplify and accelerate the process for scientific research with respect to native plants, animals, microorganisms and other materials and to facilitate the process for economic exploitation of biodiversity resources.

In addition to the implementation of the legislation mentioned above, we foresee the following trends in the forthcoming years: (1) a review of the National Policy on Climate Change in light of the Paris Agreement; (2) new case law to be brought on the civil liability regime, specifically involving financial institutions due to a new rule from the Brazilian Central Banks that obligates banks to develop a social and environmental policy; and (3) the promulgation of stricter regulation of the pollution derived from accidents, which may be influenced after the incidents of Frade (in Brazil), Macondo (in the United States) and also the Samarco mud spill. Finally, part of the Brazilian society argues that the environmental licensing process is very time-consuming and its slowness hinders, or at least inflates the costs of, infrastructure investment. Therefore, new legislative bills are addressing this subject in Congress and a new licensing law may be approved in the coming months.
I  INTRODUCTION

With the change of the Canadian federal government in 2015, there remains a tangible sense that Canada's environmental regulation is moving towards further integration with international standards, regardless of whatever final positions are assumed by the incoming US administration.

Climate change is at the centre of federal environmental policy and will extend beyond the recently announced national minimum carbon price to energy policy more generally, as well as transportation, infrastructure and resource management. It remains to be seen how many of these goals will be frustrated by assertions of provincial and territorial jurisdiction in key areas of federal strategy.

II  LEGISLATIVE FRAMEWORK

i  Federal legislation

The Canadian federal government and the provincial or territorial governments both have jurisdiction over areas of environmental protection based on the division of powers under the Canadian Constitution. As such, there is often an overlap, if not contested claims of legislative authority, between federal and provincial or territorial regulators.

The central piece of federal legislation regulating the environment is the Canadian Environmental Protection Act (CEPA), providing for, among other things, intergovernmental

---

1 Jonathan Cocker is a partner at Baker McKenzie. Special thanks to Kelsey MacKay, articling student at Baker McKenzie, for assisting with the research and writing of this chapter.
cooperation and cradle-to-grave (from beginning to end of the life cycle) regulation of toxic substances. The government recently sought public input on CEPA, which may result in changes to the current form.2

Other federal statutes that deal with specialised environmental matters include the Fisheries Act, the Canadian Environmental Assessment Act, the Arctic Waters Pollution Prevention Act, the Canada Shipping Act 2001, the Pest Control Products Act and the Transportation of Dangerous Goods Act 1992.

ii Provincial/territorial legislation
Each Canadian province and territory also has its own environmental legislation, regulating day-to-day environmental management. In Ontario, the Environmental Protection Act (EPA) regulates the environmental quality of air, soil, sediment, groundwater, sewage, certain target hazardous substances, regulated waste streams, waste management systems and some areas of waste diversion, along with reporting requirements and penalties for failure to comply with the EPA. Other provincial statutory areas of environmental regulation include provincial and territorial environment assessments, waterbodies, drinking water, pesticides, nutrient management, renewable energy and climate change.

iii International agreements
Canada’s international commitment to protection of the environment and minimisation of climate change currently emanates from the United Nations Framework Convention on Climate Change (the Paris Agreement), an agreement that requires all parties to commit to ‘nationally determined contributions’ and report on emissions and agreement implementation plans.3 Canada is also a party to the Climate and Clean Air Coalition to Reduce Short-Lived Climate Pollutants with a number of other nations, which is a voluntary initiative aimed at protecting the environment and public health and addressing climate change.4 Additionally, Canada is a party to numerous bilateral and multilateral environmental agreements with nations around the globe.5

---

4 Canada, climatechange.gc.ca, ‘Climate and Clean Air Coalition (CCAC) to Reduce Short-Lived Climate Pollutants (SLCPs), (mod. 27 November 2015), online: www.climatechange.gc.ca/default.asp?lang=En&n=7F771E4A-1.
5 See list of Canada’s environmental agreements: Canada, Environment and Climate Change Canada, Engagements in International Environmental Agreements, (mod. 9 June 2016), online: www.ec.gc.ca/international/default.asp?lang=En&n=0E5CED79-1.
III THE REGULATORS

i Federal
Environment Canada regulates and enforces rules with respect to environment with a publicly stated mandate to:

a preserve and enhance the quality of the natural environment, including water, air, soil, flora and fauna;
b conserve Canada’s renewable resources;
c conserve and protect Canada’s water resources;
d enforce rules relating to boundary waters; and
e coordinate environmental policies and programmes for the federal government.  

In addition to Environment Canada, the Ministry of Fisheries and Oceans oversees the Fisheries Act and the Oceans Act and the Ministry of Transportation oversees the Transportation of Dangerous Goods Act 1992.

ii Provincial and territorial
Provinces and territories have regulators similar to Environment Canada. For example, in Ontario, the Ministry of Environment and Climate Change (MOECC) administers certain pieces of legislation with respect to environment and climate change, including: the Clean Water Act, the Environmental Protection Act, the Safe Drinking Water Act, the Toxics Reduction Act, and the Waste Diversion Act.

iii Courts
Courts in Canada play an important role in enforcing laws as they exercise appellate and review powers over administrative environmental decision-making. In some provinces, the environmental protection legislation expressly mandates the courts to determine liability and apportion damage for environmental harm, though most environmental protection issues are determined, at first instance, by specialised environmental administrative tribunals. For example, the Ontario Environment Review Tribunal resolves applications and appeals under the EPA and the British Columbia Environmental Appeal Board hears appeals of decisions of government officials under the Environmental Management Act (an act similar to the EPA).

IV ENFORCEMENT

i General enforcement and compliance

Federal enforcement
Breaches of CEPA include the unauthorised importation of chemicals into Canada, ocean dumping and international air pollution. Offences under CEPA are quasi-criminal and carry with them heavy fines or imprisonment terms. Penalties for failure to comply with the terms

7 Ibid, at 2 (Environmental Management in Canada).
of an authorisation or direction include a fine of up to C$1 million or imprisonment of up to three years, or both. For example, in 2015 a company was ordered to pay C$375,000 after pleading guilty to offences under CEPA, the Fisheries Act, and the Environmental Emergency Regulations relating to the spill of chemicals into the environment and water frequented by fish.

There are two enforcement categories under CEPA: inspection and investigation. If, during the course of an inspection, it is determined that a provision under CEPA has not been complied with, the inspector may issue a warning, ticket, direction, ministerial order or injunction, depending on the severity of the violation. An investigation involves the gathering of information from a number of sources and may include, where necessary, obtaining a search warrant.

The two most significant corrective measures under CEPA are environmental protection alternative measures, which are negotiated settlements, and environmental protection compliance orders. Offenders may also receive hefty financial ‘administrative monetary penalty orders’, which may be awarded in addition to prosecutions for the same offence.

**Provincial and territorial enforcement**

At the provincial or territorial level, the consequences for failure to report a violation of either environmental law or the terms of an environmental approval or licence can be severe. In Ontario, for instance, generally every person who contravenes the EPA is guilty of an offence and can be liable, for each day or part of a day that the offence occurs or continues, for a fine of up to C$50,000 on a first conviction and, on each subsequent conviction, for a fine of up to C$100,000, imprisonment for a term of up to one year, or both.

A corporation that contravenes the EPA is generally liable on conviction, for each day or part of a day on which the offence occurs or continues, to a fine of not more than C$250,000 on a first conviction and not more than C$500,000 on each subsequent conviction. The trend in the provinces and territories recently has been towards widening the net of environmental liability and attacking pollution offenders at the source, whether as owners or occupiers of property, owners of contaminants or, increasingly, directors and officers of the polluting corporation. The Ontario Court of Appeal recently held the City of Kawartha Lakes responsible for a fuel spill that migrated from an adjacent property, in

---

8. Canadian Environmental Protection Act, SC 1999, c 33, at Section 272.1 [CEPA].
12. Ibid, at Section 187.
spite of its innocence (as it was neither a polluter nor an occupant). Conversely, in British Columbia, the principle of polluter pays was strictly applied to hold a historical owner liable for the pollution of land.

ii Environmental torts

In addition to administrative sanctions, civil cases under the common law of toxic torts may be brought where a party has suffered environmental harm. Toxic tort cases in Canada fall into two categories: generic causation and specific causation. In order to be successful in a claim for damages for a toxic tort, the plaintiff must prove: first, that the defendant's substance was capable of causing the injury claimed (the generic causation); and, second, that the toxic substance actually caused the illness or damage in the specific circumstances (the specific causation). Causation is difficult to prove in Canada as there must be evidence that the action or inaction of the defendant caused the specific damage or injury claimed by the plaintiff.

Class actions for environmental torts have also encountered resistance in Canadian courts. For example, the Supreme Court of Canada (SCC) in Hollick v. Toronto (City) held that the requirements to certify the class action were not met in a case where the plaintiffs complained of noise and physical pollution from a landfill that was owned and operated by the City of Toronto. However, the SCC kept the door open for future class actions for toxic torts, stating that ‘[w]hile the appellant has not met the certification requirements here, it does not follow that those requirements could never be met in an environmental tort case.’

iii Corporate liability

Owners and previous owners of property, occupants and previous occupants, as well as persons who have or had charge, management or control of the source of contamination, may all be within the reach of regulatory authorities. Corporations in Canada are viewed as 'persons' who are subject to the same environmental liability as any other individual. However, the nature of environmental protection laws allows governments to avoid corporate boundaries to hold other parties liable for environmental damage. Some environmental statutes use 'owners' and 'operators' as the categories of liable persons, including natural persons acting in concert with those owners and operators.

One common test for environmental liability used in Canada is 'control'. The test of control is a factual one, based on an assessment of the corporation's scope of activity causing

---

13 Kawartha Lakes (City) v. Ontario (Environment), 2013 ONCA 310, at paragraphs 19-21.
15 The principal torts claimed in environmental matters are (1) nuisance; (2) negligence; (3) trespass; and (4) strict liability.
17 Hollick v. Toronto (City), 2001 SCC 68, at paragraphs 36, 2.
18 Ibid, at paragraph 37.
19 Canada Business Corporations Act, RSC, 1985, c C-14, at Section 15(1).
20 See for example: CEPA, supra; EPA, supra.
pollution. If the corporation can and should control the activity at the point where pollution occurs, migrates or otherwise creates an adverse impact, then it will be responsible for the pollution.\(^{21}\) As a result of this test of control, parent companies may be held liable for the environmental offences of both their agents and subsidiaries; however, such a case has not been substantively considered by Canadian courts.

Generally, where a corporate entity is not used in the commission of a fraud, courts are reluctant to look beyond the corporate structure or ‘pierce the corporate veil’ and award damages for environmental torts. As such, a corporation will only be held responsible for the actions of a subsidiary corporation committing an environmental tort (even if that subsidiary is wholly-owned by the parent) where it can be demonstrated that the parent company is an ‘alter ego’ for the subsidiary.\(^{22}\)

iv  Director liability

It is common in Canada for statutes to hold directors and officers liable when they authorise, acquiesce or participate in an environmental offence.\(^{23}\) A director or officer who actually approves an action that is an offence, even if the action is not carried out personally, can be said to have authorised it. A failure to take action or engaging in wilful blindness or negligence, despite awareness of the commission of an offence or of an omission to act, may constitute acquiescence. A director or officer can be said to cause or permit a corporate offence if the director or officer was in a position of influence and control to prevent the commission of the offence but failed to act. How much control will result in liability is determined by a factual assessment of proximity to the activity at the point at which pollution occurs.\(^{24}\) Further, liability will ‘crystallise’ at the time of pollution and may follow a director or officer long after resignation.\(^{25}\)

The defence of due diligence is available to directors and officers for environmental liability. The defence was introduced in the 1978 case, \textit{R. v. Sault Ste. Marie}, in which the SCC created a new category of offences now known as ‘strict liability’ offences. Essentially, strict liability offences preserve administrative ease of proof, since \textit{mens rea}, or the guilty mind, is not an ingredient of the offence. In other words, an accused will be found liable so long as the offence was committed, regardless of their intention. An accused may be acquitted, however, if, on the balance of probabilities, all reasonable care or due diligence was exercised to avoid the particular event giving rise to the charges.\(^{26}\)

\(^{21}\) See for example: \textit{Midwest Properties Ltd. v. Thordarson}, 2015 ONCA 819, at paragraphs 81–89.

\(^{22}\) CED (online), Business Corporations Ontario, ‘Characteristics of a Corporation: Limited Liability; Piercing or Lifting Corporate Veil’ (I.2(b).(ii) (Ontario)) at Section 23–28.

\(^{23}\) See for example: CEPA, \textit{supra} at Section 280.1; EPA, \textit{supra} at Section 194.

\(^{24}\) See for example: \textit{Midwest Properties Ltd. v. Thordarson}, 2015 ONCA 819, at paragraphs 81–89.

\(^{25}\) See: \textit{Baker v. Ministry of Environment}, 2013 ONSC 4142, wherein the Ontario Divisional Court refused to stay an order issued by Environment Canada against former directors and officers of a corporation, meaning that they remained responsible for monitoring, reporting, and remediation.

V REPORTING AND DISCLOSURE

i Environmental audits

With the introduction of the ISO 14000 environmental management standards, environmental auditing has become even more common. In addition, audits may be required for lending purposes, in purchase and sale transactions, for landlord or tenant purposes or simply to identify areas of potential risk. Environmental audits are not, however, generally mandated by any government legislation or regulation in Canada.

ii Reporting requirements

There are specific reporting requirements under CEPA and provincial or territorial legislation for unauthorised discharges into the environment including where ‘adverse effects’ may be caused.

VI ENVIRONMENTAL PROTECTION

i Air quality

Federal, provincial and territorial governments each have general air emission assessment and reporting obligations: under CEPA, there is a National Pollutant Release Inventory (NPRI); provincially, there are programmes such as Ontario Regulation 419/05, which requires Emission Summary and Dispersion Modelling Reports.\(^{27}\) The NPRI is Canada’s publicly accessible inventory of pollutants that have been released (into the air, water or land), disposed of or transferred for recycling.\(^{28}\) The NPRI requires owners and operators to report releases of substances that exceed certain quantities. For the 2014 reporting year, 7,720 owners or operators of industrial, commercial and institutional facilities submitted NPRI reports regarding 343 substances; however, the Report notes that there has been a general decline in the quantities of substances released directly into the environment and a decline in the number of facilities that report each year.\(^{29}\) Canada has also regulated certain industries and air pollutants separately, in order to address the complexities of each.\(^{30}\)

In 2012, the Ministers of the Environment (with the exception of Quebec) agreed to implement the Air Quality Management System (AQMS), which is a comprehensive...

---

27 Ontario Regulation 419/05, supra at Sections 22–27.
28 Environment and Climate Change Canada, National Pollutant Release Inventory, (mod. 19 April 2014), online: www.ec.gc.ca/inrp-npri/.
30 For example: Under the Ozone-depleting Substances Regulations, 1998, (ODSR) individuals must receive authorisation from Environment Canada prior to manufacturing, importing or exporting a an ozone-depleting ‘controlled substance’ (defined in the ODSR) by obtaining a consumption allowance or a permit. The On-Road Vehicle and Engine Emission Regulations under CEPA establish emission limits and standards for all vehicles, engines and motorcycles and are harmonised with those in the United States by reference to applicable US standards.
approach to reducing air pollution by governments and stakeholders in Canada.\textsuperscript{31} The goals of the AQMS are accomplished in many ways; for example, the provinces and territories delineate air zones within their jurisdictions and agree to improve air quality and ensure the Canadian Ambient Air Quality Standards are met.\textsuperscript{32} A growing number of municipalities have also implemented local air emissions by-laws. Pursuant to the City of Toronto Bylaw No. 1293-2008, colloquially referred to as the ‘Right to Know Bylaw’, Toronto has created the ChemTRAC programme, designed to increase public awareness regarding chemicals and pollutants in the Toronto area by providing access to an interactive map of the city that allows residents to locate facilities in their neighbourhood that emit regulated substances.\textsuperscript{33} The Right to Know Bylaw requires small and large companies to report to Toronto Public Health each year that the facility emits certain substances that have been identified to be harmful to health and linked to cancer or lung problems.\textsuperscript{34} The Right to Know Bylaw obligates, for the first time, many small to medium-sized companies (such as printing companies, food and beverage manufacturers, etc.) to monitor their use and release of hazardous substances into the air and report any release to the public.\textsuperscript{35} The Right to Know Bylaw has a lower threshold for reporting the release of certain substances than provincial and federal legislation.\textsuperscript{36}

\section*{ii Water quality}

In Canada, the federal government is responsible for fisheries, navigation, federal lands, and international relations, including issues related to the management of boundary waters, and also is generally responsible for agriculture, health and the environment. Provinces and territories are also responsible for regulation of waterways within each respective jurisdiction and CEPA is thus intended to supplement and compliment existing provincial regulations.\textsuperscript{37} In particular, CEPA regulates which substances may enter water in Canada to prevent deleterious effects to water.\textsuperscript{38} The federal government, under this authority, has also released a number of guidelines with respect to protecting water quality from certain substances.\textsuperscript{39} The Department of Fisheries and Oceans (DFO) and Environment Canada share responsibility for the conservation and protection of fish habitat and freshwater in Canada under the Fisheries Act. The DFO administers habitat protection, the prohibition against any work

\begin{itemize}
  \item \textsuperscript{31} Canadian Council of Ministers of the Environment, Resources – AQMS, online: www.ccme.ca/en/resources/air/aqms.html.
  \item \textsuperscript{32} Ibid.
  \item \textsuperscript{33} City of Toronto, ‘ChemTRAC Data’, online: www1.toronto.ca/wps/portal/contentonly?vgnextoid=63dfad7efc232510VgnVCM10000071d60f89RCRD.
  \item \textsuperscript{34} Anne Wordsworth, Heather Marshall, and Sarah Miller, Toronto Toxic Reduction Tool Kit, Toronto Cancer Prevention Coalition, March 2013, online: www.cela.ca/sites/cela.ca/files/TorontoToxicReductionToolKit-fulltext.pdf, at TK1.2.
  \item \textsuperscript{35} Ibid, at TK1.2.
  \item \textsuperscript{36} Ibid, at TK3.2.
  \item \textsuperscript{37} Guide to CEPA, supra at 8.1.2 (Who Protects Canada’s Marine Environment?).
  \item \textsuperscript{38} Canada, Environment and Climate Change Canada, Federal Policy and Legislation, at ‘Water Regulation’.
  \item \textsuperscript{39} Canada, Environment and Climate Change Canada, Guidelines and Objectives, (mod. 17 October 2016), online: www.ec.gc.ca/lcpe-cepa/default.asp?lang=En&n=E9DBBC31-1.
\end{itemize}
or undertaking that would cause the harmful alteration, disruption or destruction of a fish habitat. 40 Environment Canada oversees the prohibition against the depositing of deleterious substances into waters in Canada without authorisation. 41

Provincial and territorial legislation plays a key role in protection of water quality in Canada. The Ontario Water Resources Act (OWRA) also makes it an offence to discharge any materials into water that impair the quality of the water, with reporting requirements for the same. 42 The goals of the OWRA are furthered by the EPA, which sets out specific effluent limit regulations in certain sectors including: petroleum, pulp and paper, industrial minerals, metal casting, metal mining, organic chemical manufacturing, inorganic chemical manufacturing, iron and steel, and electric power. 43

Ontario, in particular, has enacted fulsome legislation for the protection of water quality in the province. 44 Ontario has pledged to protect and restore the ecological health of Ontario’s Great Lakes in the Great Lakes Protection Act 2015, in order to follow through on its Great Lakes Strategy. 45 The Great Lakes Nutrient Initiative of Environment Canada will provide funding to address algae growth in the Great Lakes and advance scientific research into the causes of algae. 46 In addition to other national efforts, 47 Canada and the US entered into a Great Lakes Water Quality Agreement, which was most recently amended in 2012, wherein both parties agree to take steps to restore and protect the water quality and health of the ecosystems of the Great Lakes. 48

iii Chemicals

There have been considerable regulatory developments under Environment Canada’s Chemical Management Plan (CMP), since its inception in 2006, including requirements for surveys, substance reassessments and permits. Monitoring and surveillance initiatives are central to the CMP and involve the collection of chemical, physical and biological data.

41 Ibid.
43 See regulations under EPA, supra.
44 For example, the Safe Drinking Water Act, 2002 sets out standards for quality, testing, treatment, reporting, and penalties for non-compliance with the Act that apply to owners of a municipal drinking water system or a regulated non-municipal drinking water system. Ontario has also enacted the Water Opportunities Act which aims to foster innovative water, wastewater and stormwater technologies in Ontario in order to create clean-technology jobs and conserve and sustain water resources.
45 Great Lakes Protection Act, 2015, SO 2015, c 24, at 1.
47 For example, Environment Canada has established a fund to protect the water quality of Lake Winnipeg, Canada’s sixth largest lake (just behind the five Great Lakes), which is located in Manitoba.
in order to detect and characterise environmental change.\textsuperscript{49} Environmental monitoring and surveillance initiatives include national monitoring programmes for landfills and concentrations of chemicals in the environment. Human surveillance and monitoring include obtaining information to focus research on areas with respect to determining baseline levels of chemicals that exist in Canadian citizens and corresponding health risks, trends in exposure, evaluation of under-studied substances, and assessment of the effectiveness of health and environmental efforts.\textsuperscript{50}

Pursuant to the CMP, risk assessments of new substances and existing substances on the Domestic Substances List (DSL) are being undertaken to determine whether a substance is toxic\textsuperscript{51} and thus poses a risk to human health or the environment and to impose restrictions upon its use as necessary.\textsuperscript{52} CEPA provides the definition of toxic substances, which includes substances that may have immediate or long-term harmful effects or pose a danger to the environment or human health.\textsuperscript{53} Restrictions upon the use of DSL substances have been expanding significantly as part of the CMP’s reassessment of existing chemicals. Some substances on the DSL, used in ‘significant new activities’, are also subject to notification requirements.\textsuperscript{54}

Transport Canada oversees the Transportation of Dangerous Goods Regulations (the TDG Regulations), which maintain nine classes of dangerous goods, namely: explosives; gases; flammable liquids; flammable solids; oxidising substances and organic peroxides; toxic and infectious substances; radioactive materials; corrosive substances; and miscellaneous products, substances, or organisms.\textsuperscript{55} In addition to the classifications, certain dangerous goods are further assigned one of three hazard levels that are intended to show when a substance is particularly hazardous.\textsuperscript{56} The TDG Regulations also set out specific requirements with respect to documentation and signage with respect to the dangerous goods. Among others, the TDG Regulations require that transporters of dangerous goods have a shipping document with respect to the dangerous goods that are being transported, which must contain certain information and have an Emergency Response Assistance Plan. It is also the


\textsuperscript{50} Ibid.

\textsuperscript{51} Section 65 provides the definition of toxic substances, which includes substances that may have immediate or long-term harmful effects or pose a danger to the environment or human health.


\textsuperscript{53} CEPA, \textit{supra} at Section 64.


\textsuperscript{56} Ibid.
responsibility of the transporters to ensure that there are adequate safety markings displayed that make it clear that dangerous goods are being transported, with immediate reporting requirements upon any release of a substance.57

iv Solid and hazardous waste and waste diversion

In Canada, federal jurisdiction over waste is very limited and generally restricted to certain categories of toxic and hazardous waste,58 while provinces and territories may make regulations for all other wastes.59 Under the EPA, a certificate of approval is required for a waste management or waste disposal site and it is prohibited to deposit waste in land that is not a waste disposal site.60 Waste generation is, where consistent with the EPA more generally, subject to registration but not to permit requirements.61

In 2009, the Canadian Council of Ministers of the Environment approved an action plan for Extended Producer Responsibility (EPR),62 that was intended to create a harmonised approach by the provinces to waste management in Canada.63 By making producers responsible for the end-of-life management of products, the responsibility and costs associated with these products at end-of-life is shifted from governments and consumers, to producers and thus there is an intended financial incentive for producers to use environmentally friendly packaging.64 While the intent of EPR is to create a harmonised approach, provinces still have autonomy to determine how to implement the principles of EPR with respect to different kinds of waste. Corporations will need to be aware of costs associated with end-of-life management of products and the particular legislative framework in its jurisdiction.

In June 2016, the Ontario government introduced a unique waste diversion initiative set to come into effect in January 2017. The Waste-Free Ontario Act (WFOA) aims to shift to a ‘circular economy’ to increase resource recovery and diminish waste.65 This initiative will be the first of its kind in North America in that manufacturers, importers and brand owners are now directly responsible for diverting the waste created by their products and packaging.

57 Ibid, at Parts 3 and 4.
58 Canada’s response to hazardous waste is dealt with in more detail under the section entitled ‘Contaminated land’.
60 EPA, supra at Section 27.
61 EPA, supra.
62 According to the Canadian Council of Ministers of the Environment, Progress Report on the Canadian-wide Action Plan for Extended Producer Responsibility (2014), EPR is defined as ‘a policy approach in which a producer’s responsibility for a product is extended to the postconsumer stage of a product’s life cycle’.
64 Ibid.
v Contaminated land

Provincial and territorial legislation, such as the EPA, provides for the clean up and redevelopment of underused industrial and commercial brownfields. If a brownfield property is being redeveloped, property owners must meet requirements with respect to assessing the environmental condition of the property where seeking a record of site condition. Ontario has recently released a set of draft guidelines to help proponents of projects consider climate change when completing an environmental assessment. The draft guideline suggests that project proponents consider the emissions of the project, the potential effect on the capacity of the surrounding environment to remove carbon dioxide from the area, and sets out general steps and questions to consider.

VII CLIMATE CHANGE

Canada’s stated priorities with respect to climate change start with the Paris Agreement. Provincial and territorial governments have also been taking steps to address the effects of climate change. Ontario’s Green Energy Act 2009 exempts renewable energy projects from certain municipal and provincial approvals through a comprehensive programme that guarantees rates for energy generated from renewable sources and is designed to encourage the development of renewal energy projects. The Climate Change Mitigation and Low-carbon Economy Act 2016, which authorised the creation of a regulatory scheme to reduce greenhouse gas, is used to assist Ontarians with a transition to a low-carbon economy, and to enable Ontario to collaborate and coordinate its actions with other jurisdictions, including Quebec.

Other provinces have differing legislative frameworks to limit greenhouse gas emissions. Alberta was Canada’s first province to regulate greenhouse gas with its Specified Gas Emitters Regulation. As of January 2017, the province will also impose a carbon levy on transportation and heating fuels. The Alberta government also recently introduced Bill 25, the Oil Sands Emissions Limit Act, which would have an annual 100 megatonne cap on greenhouse gas emissions specifically from oil sands in Alberta, which is intended to encourage innovation and use of renewable energy technology.

Quebec has implemented a cap-and-trade system that places an overall cap on emissions, which is linked to California’s cap-and-trade programme. British Columbia implemented a carbon tax on all fossil fuels consumed in the province that has gradually

---

67 ECOLOG, ‘Ontario drafts guide on how to include climate change in EAs’ (9 September 2016), online: www.ecolog.com/land/issues/ISArticle.asp?aid=1003868288&PCC=EHSC&issue=09282016.
68 Climate Change Mitigation and Low-carbon Economy Act, 2016, SO 2016 c 7, at 2(1).
increased since its inception in 2008. In October 2016, the federal government announced a national minimum carbon price based on greenhouse gas emissions that will apply to provinces and territories that do not implement their own regimes by 2018.

Whether the provincial and federal schemes with respect to carbon-pollution pricing will be successful in achieving the stated goals is yet to be seen. Some provinces have embraced a form of carbon tax, but the federal government’s announcement of its carbon tax plan has caused controversy in Canada and resulted in the Premier of Saskatchewan threatening legal action.

VIII OUTLOOK AND CONCLUSIONS

The coming year will be telling as to how Canada reacts to the changes in US environmental policy, as well as the consequences of the UK’s ‘Brexit’ vote. Before these events transpired, the federal government made election commitments on the environment that might now be revisited in the name of competitiveness in light of the changing economic dynamic.


I  INTRODUCTION

The current EU environmental and climate change policy objectives are set out in the Seventh Environmental Action Programme, which guides EU environmental policy until 2020. The objectives are to (1) protect, conserve and enhance the EU’s natural capital, (2) turn the EU into a resource-efficient, green and competitive low-carbon economy, and (3) safeguard the EU’s citizens from environment-related pressures and risks to health and well-being. Recent initiatives include overhauling the EU’s current environmental legislative framework ‘to make it fit for purpose’ and further encouraging ‘Green Growth’ to turn the EU into a resource-efficient, green and competitive low-carbon economy. The EU is committed to its 2030 targets to cut greenhouse gas emissions by 40 per cent and to improve energy efficiency

---

1 Jacquelyn F MacLennan is a partner and Tallat S Hussain is environmental counsel at White & Case LLP. The authors wish to thank Andrew Wright for his assistance.
2 In November 1973 the First Environmental Action Programme was agreed, reflecting concerns about the ‘limits of growth’ discussed at the first UN Conference on Environment in Stockholm in 1972.
3 The tools available for the EU to achieve these goals are: (1) better implementation of legislation; (2) better information by improving the knowledge base; (3) more and wiser investment for environment and climate policy; and (4) full integration of environmental requirements and considerations into other policies, http://ec.europa.eu/environment/action-programme accessed 9 December 2016.
by 27 per cent. In the wake of the Paris Agreement and reflecting the EU’s prominent role in combating climate change impact, the political focus remains on environmental sustainability and tackling climate change.

II LEGISLATIVE FRAMEWORK

Environmental legislation in the EU does not have a long history. The EU’s founding treaty, the Treaty of Rome, made no mention of environmental policy, and it was not until a 1973 European Council Declaration that environmental issues were even addressed in EU law and policy. Over the years and through various treaty revisions, the EU has developed an environmental protection and climate change framework. Today, Article 3(3) of the Treaty on European Union (TEU), inserted by the 2009 Lisbon Treaty, lists among the EU’s objectives ‘sustainable development… based on… inter alia a high level of protection and improvement of the quality of the environment’. Environmental policy is also now listed as an element in the completion of the internal market through Article 114(3) of the Treaty on the Functioning of the European Union (TFEU) and the TFEU contains a specific section on environmental policy in Title XX. Article 191(1) provides that the EU shall contribute to: preserving, protecting and improving the quality of the environment; protecting human health; prudent and rational utilisation of natural resources; and promoting measures at an international level to deal with regional or worldwide environmental problems, and in particular combating climate change. To attain these objectives, the following principles apply: measures should be adopted on the basis of (1) the highest level of protection taking...
into account the diversity of situations in the various regions of the EU, (2) the precautionary principle, (3) preventative action, (4) environmental damage should as a priority be rectified at source, and (5) the polluter should pay.

To implement these principles, the EU legislature is empowered to adopt legal acts (such as directives and regulations). Article 194 TFEU, which is the legal basis for the adoption of measures in the field of energy, requires EU policy to be exercised with regard to preserving and improving the environment, as well as promoting energy efficiency and energy saving and the development of new and renewable forms of energy.

The EU has moved towards adopting environmental measures in the form of regulations that are directly applicable in the law of Member States, such as the fundamentally important REACH Regulation regarding chemicals. The other mechanism typically used for environmental legislation in the EU is directives, which must be transposed into national law, but Member States have discretion in terms of the form of implementing measures. Some of the more significant directives are the EU Habitats Directive, the Waste Framework Directive.

\[\text{European Union}\]

---

11 The precautionary principle is an approach to risk management that is based on the possibility that a given policy or action might cause harm to the public or the environment and if there is still no scientific consensus on the issue, the policy or action in question should not be pursued. Once more scientific information becomes available, the situation should be reviewed.

12 These were introduced into the Treaties by the Single European Act 1987 and are now contained in Article 191(2) TFEU.

13 EU environmental law must take account of available scientific and technical data, environmental conditions in the various geographic regions of the EU, the potential benefits and costs of action or inaction, and the economic and social development of the EU as a whole as well as the balanced development of its regions (see Article 192(3) TFEU). Legal acts adopted pursuant to Article 192 TFEU do not prevent Member States from maintaining or introducing more stringent protection measures, so long as such measures are compatible with the TEU and TFEU and are notified to the Commission (see Article 193 TFEU).


15 Article 288 TFEU provides: '[t]o exercise the Union’s competences, the institutions shall adopt regulations, directives, decisions, recommendations and opinions'.

The EU emissions trading scheme (EU ETS), is one of the more far-reaching EU measures, as it also links to the Kyoto Protocol emission reduction and trading mechanisms. Currently in its third phase (2013–2020), the EU ETS sets an EU-wide cap on emissions of certain greenhouse gases and allocates allowances by auction (rather than for free, as was the approach for the first and second phases). The EU ETS is currently under reform for its fourth phase from 2020 onwards.

The EU may also enter into international agreements on environmental protection with other countries and international organisations (Articles 191(1) and (4) TFEU). These may contain obligations that must be implemented into EU law. For example, the EU has acceded to the Aarhus Convention and the Kyoto Protocol, and on 5 October 2016 to the historic Paris Agreement, which aims to limit global warming well below 2°C above pre-industrial levels.

Finally, and beyond the EU’s specific environmental competences, the TFEU contains a horizontal environmental clause in Article 11, which requires environmental protection to be integrated into the definition and implementation of all EU policies and activities, in particular with a view to promoting sustainable development. This statement is echoed in Article 37 of the Charter of Fundamental Rights of the European Union (the Charter), which was incorporated into the EU Treaty from the Lisbon Treaty in 2009), raising the status of environmental protection to a fundamental right.

23 The Kyoto Protocol sets internationally binding emission reduction targets. Both the EU and its Member States are signatories.
III THE REGULATORS

The primary policymaker and enforcer of EU environmental and climate change rules is the European Commission (the Commission). While EU environmental legislation is scrutinised and formally adopted by the European Council and the European Parliament, the Commission acts as the initial proposer of legislation in the EU legislative process. Article 17 TEU identifies the Commission's role as ensuring the application of the Treaties, including their environmental provisions, and secondary measures (such as directives and regulations). The Commission is also often described as the 'Guardian of the Treaties' for the EU.25 If the Commission considers that a Member State has failed to fulfil its EU environmental law (or other) obligations, it may bring infringement proceedings, as described in Section IV, infra.

The responsible department of the Commission for fulfilling its general functions in the environmental sphere is the Directorate-General for Environment, which has a staff of just over 500. In 2010 a new Directorate-General for Climate Action was created, responsible for dealing with consequences of climate change and implementing the EU ETS.26 The Directorate-General for Energy is responsible for energy policy and these three Directorate Generals have to work together closely, recognising the importance of energy policy in creating a sustainable environment.

Specialised bodies, offices and agencies regulate specific sectors and aspects of EU environmental law and policy. The European Chemical Agency, for example, is responsible for the registration, evaluation, and potential authorisation or restriction of chemicals under the REACH Regulation. Other important bodies are the European Food Safety Authority (EFSA) and the European Integrated Pollution Prevention and Control Bureau (IPPC). In addition, the European Environment Agency is responsible for providing information on the environment (including in the energy, industry and transport sectors).27

IV ENFORCEMENT

The Commission and other EU bodies with a role in environmental policy are overseen by the Court of Justice of the European Union (CJEU, constituted by the General Court and the Court of Justice). Pursuant to Article 263 TFEU, the CJEU has responsibility for reviewing the legality of legislative acts (such as regulations and directives) and other acts of the Commission and other EU bodies, offices or agencies intended to produce legal effects

in relation to third parties. As well as Member States and EU institutions, individuals and NGOs may challenge EU legal acts. However, obtaining standing to bring an action is notoriously difficult for individuals and NGOs, particularly in the environmental context. As a result, EU environmental legislation is often subject to challenge in national courts, after it has been implemented into national law. Questions relating to the legality of EU measures may reach the CJEU if a preliminary ruling is requested by a national judge.

If the Commission considers a Member State has failed to fulfil an obligation under the Treaties, including complying with EU environmental treaty obligations and implementing EU legal acts in the environmental sphere, it is responsible for bringing infringement proceedings against the Member State in question, under Article 258 TFEU. The Commission will first deliver a reasoned opinion on the matter after giving the Member State concerned the opportunity to make submissions. If the Member State concerned does not comply with the opinion of the Commission within the prescribed period, the Commission may bring the matter before the CJEU. There are numerous examples of the Commission using Article 258 TFEU to ensure that Member States properly implement EU environmental legislation, such as directives like the Waste Framework Directive.

For example, in a recent case against the UK government, the CJEU found a Welsh coal plant, Aberthaw power station, in breach of the nitrogen oxide (NOx) emissions limits set out in the Large Combustion Plants Directive (Directive 2010/75). The CJEU judgment confirmed the Commission’s finding that the power station had emitted more than double the relevant NOx since 2008. Consequently, the UK is required to take measures necessary to comply with the judgment and if it still fails to act, the Commission may open another infringement procedure under Article 260 TFEU, with only one written warning before referring it back to the CJEU. The CJEU has the power to impose a financial penalty on a Member State, depending on the duration and severity of the infringement. Recent examples of penalties being imposed by the CJEU have been against Italy and Greece in the context of the Waste Framework Directive. These cases demonstrate the weight of financial penalties that the CJEU may impose on Member States that do not comply with its judgments: Greece was ordered to pay a lump sum of €10 million and €14.52 million for every further six months of non-compliance and Italy was ordered to pay a €40 million lump sum and €42.8 million for every further six months of non-compliance.

---

28 For some of the more significant cases before the CJEU relating to environmental issues such as air, waste, water and nature conservation see http://ec.europa.eu/environment/legal/law/pdf/leading_cases_en.pdf, accessed 9 December 2016.
29 The EU institutions include the Commission, Council and European Parliament.
31 See Article 267 TFEU.
33 C-304/15, Commission v. United Kingdom, ECLI:EU:C:2016:706.
To facilitate the finding of liability for environmental damage in the EU as a whole, in 2004 the Environmental Liability Directive\(^{35}\) (ELD) was adopted, based on the ‘polluter pays’ principle. Under the ELD, operators carrying out dangerous activities\(^{36}\) have strict liability for environmental damage.\(^{37}\) Operators carrying out other activities are liable for fault-based damage to protected species or natural habitats, provided there is a causal link.\(^{38}\) Considering the ‘polluter pays’ principle, the CJEU recently confirmed that the ELD does not give a basis for Member States to require current owners of polluted sites, who did not themselves cause the pollution, to adopt preventative or remedial measures to deal with the pollution.\(^{39}\)

V REPORTING AND DISCLOSURE

EU law does not provide for reporting and disclosure requirements for violation of permits or environmental regulations or contamination on property. This is dealt with at the Member State level. Matters such as whistle-blower protection are also dealt with in national law at a Member State level. There are, however, mechanisms for disclosure of potential environmental liabilities in financial statements and reporting. Under the Non-Financial Reporting Directive, public entities with more than 500 employees should disclose in their management reports relevant and useful information on their policies, main risks and outcomes relating to, among other things, environmental matters.\(^{40}\) These rules on non-financial reporting were required to be transposed into Member States’ law by 6 December 2016.\(^{41}\)

---


36 Ibidem, Annex III.

37 Ibidem, see Article 2 et seq.


39 C-534/13 Ministero dell’Ambiente e della Tutela del Territorio e del Mare and Others v. Fipa Group srl and Others, ECLI:EU:C:2015:140.


VI ENVIRONMENTAL PROTECTION

As discussed above, over the years, the EU has developed a complex regime of environmental protection legislation on air and water quality, chemicals, and solid and hazardous waste, which is law in EU Member States.

i Air quality

Air Quality Framework Directive

Directive 2008/50 on ambient air quality and cleaner air for Europe (Air Quality Framework Directive (AQFD))\(^{42}\) updates and draws into one instrument almost all EU directives on air quality management, including air quality standards and targets for particular pollutants such as SO2, NOx, lead (Pb), carbon monoxide (CO), benzene, PM-10, PM-2.5 and ozone.

The AQFD, first sets up a regime for the monitoring and assessment of ambient air quality, for the collection, exchange and dissemination of air quality information and to better understand the impacts of air pollution for the development of appropriate policies.\(^ {43}\) Air quality assessment occurs in ‘zones of agglomerations’,\(^ {44}\) established by Member States. This allows areas with relatively common air quality characteristics to be assessed together. Physical monitoring is only required in zones where concentrations of relevant pollutants are above certain thresholds set by the Directive.\(^ {45}\) Otherwise, modelling or objective-estimation techniques suffice to generate the relevant data.\(^ {46}\) In all events, scientific methods are central to Member States establishing and meeting their assessment obligations.

The AFQD also sets up an air quality management system\(^ {47}\) using a series of environmental quality standards (EQSs) and targets. These depend on the following parameters: (1) the pollutants at issue, (2) their respective risks to human and environmental health, (3) current knowledge about how to control them, and (4) the costs involved in doing this. Different regulatory obligations and consequences attach to each EQS. EQSs include limit values as part of national exposure reduction targets, target values and alert thresholds. Alert thresholds are defined by the AQFD as a level beyond which there is a risk to human health from brief exposure for the population as a whole.\(^ {48}\)

Secondly, the AFQD requires Member States to draw up air quality plans\(^ {49}\) and short-term action plans\(^ {50}\) including transboundary air pollution plans, where applicable,\(^ {51}\) for example, where levels of air pollution exceed limits or target values.\(^ {52}\) Such plans must outline how to achieve the limits or target values or appropriate measures to ensure that any

---

43 Ibidem, Recital 21.
44 Article 4.
45 Annex II.
46 Article 6(3) and (4).
47 Chapter III.
48 Article 2(10).
49 Article 23.
50 Article 24.
51 Article 25.
52 Article 23(1).
The exceedance period is minimised. The short-term action plan obligation is triggered by levels of pollutants exceeding one or more alert thresholds\textsuperscript{53} and must contain measures to be taken in the short term to reduce the risk or duration of exceedance of alert thresholds. Where information and alert EQS thresholds are exceeded, the AFQD requires Member States to inform the public and make certain air quality information available to the public.\textsuperscript{54}

A recent example of the AQFD’s requirements in action was the case brought against the UK before the CJEU, where the CJEU determined that if a Member State finds that limit values under the Directive cannot be met before the AQFD deadline and seeks a deadline postponement (for a maximum of five years), that Member State is required to make an application for the postponement of the deadline by drawing up an air quality plan demonstrating how those limits will be met before the new deadline.\textsuperscript{55}

\textbf{Industrial emissions}

The Industrial Emissions Directive (IED)\textsuperscript{56} sets up a scheme whereby large-scale industrial installations must obtain permits in order to operate. In doing so, it aims to reduce harmful industrial emissions. Around 50,000 installations carrying out the industrial activities listed in the IED\textsuperscript{57} are required to operate in accordance with a permit (granted by authorities in Member States),\textsuperscript{58} which contain conditions set in accordance with the IED. For example, the permit must take into account the whole environmental performance of the plant (including emissions, use of raw materials, and energy efficiency).\textsuperscript{59} The emission limit values must be based on best available techniques (BATs).\textsuperscript{60} BAT reference documents (BREFs) – published by the Commission – provide information on specific EU industrial sectors, the techniques and processes used in this sector, current emission and consumption levels, techniques to consider in the determination of the BAT and emerging techniques. The Commission has recently published a draft BREF in respect of large combustion plants.\textsuperscript{61}

For certain activities such as large combustion plants, waste incineration and co-incineration plants, solvent-using activities and titanium dioxide production, the IED also sets EU-wide emission values for certain pollutants.\textsuperscript{62} National competent authorities may set less strict emission values in specific cases where an assessment shows that achieving the emission level associated with BATs would lead to disproportionately higher costs compared to the environmental benefits due to geographical location or the local environmental

\begin{itemize}
  \item \textsuperscript{53} Article 24(1).
  \item \textsuperscript{54} Chapter V and Articles 19 and 26.
  \item \textsuperscript{55} C-404/13, The Queen, on the application of ClientEarth v. The Secretary of State for the Environment, Food and Rural Affairs, ECLI:EU:C:2014:2382.
  \item \textsuperscript{57} That meet the criteria in Annex I of the IED.
  \item \textsuperscript{58} Ibidem, Article 4.
  \item \textsuperscript{59} Article 5 et seq.
  \item \textsuperscript{60} Article 11.
  \item \textsuperscript{62} Cited above, Part 4.
\end{itemize}
conditions or the technical characteristics of the installation. In that regard, the IED contains certain flexibility for large combustion plants (e.g., a limited lifetime derogation). Finally, the IED requires Member States to set up a system of environmental inspections. Site visits must take place at least every one to three years, using risk-based criteria. The IED requires the public to have access to permit applications, permits and the result of the monitoring of releases.

Industrial emissions are also regulated through the Medium Combustion Plants Directive, which regulates emissions of sulphur dioxide (SO₂), nitrogen oxides (NOx) and dust from the combustion of fuels in plants with a rated thermal input equal to or greater than 1 megawatt (MWth) and less than 50 MWth.

ii Water quality
The EU’s regulation of water quality standards is primarily through Directive 2000/60/EC, the Water Framework Directive. Addressing both diffuse and point-source pollution, and establishing binding targets for water quantity and quality in relation to a wide range of water bodies, the Directive is both comprehensive and holistic. There is also issue-specific legislation such as the Directive on environmental quality standards (water policy) and the Directive on groundwater (requiring Member States to take all measures necessary to prevent inputs into groundwater of hazardous substances).

The Water Framework Directive contains four central provisions for pollution control standards in river basin districts – the ‘area of land and sea, made up of one or more neighbouring river basins together with their associated groundwaters and coastal waters’. Firstly, Member States ‘aim to achieve’ good surface water status, covering inland, coastal and transitional waters (including both good chemical and ecological status) by ‘ensuring a
The obligation under the Directive to prevent the deterioration of water and to enhance water quality is legally binding. Secondly, Member States must ensure that all relevant discharges into surface waters are controlled by emission controls based on best available techniques, applicable emission limit values, or in the case of diffuse impacts, best environmental practices set out in other EU legislation. Member States are also obliged to cease or phase out the discharge, emission or loss of priority hazardous substances and must also progressively reduce intrinsically hazardous substances, such as heavy metals. Finally, measures must be put in place to prevent deterioration in the existing quality of surface and ground waters.

iii Chemicals

Chemicals are regulated at an EU level by the REACH (Registration, Evaluation, Authorisation and Restriction of Chemical) Regulation. In principle, all chemical substances fall within the scope of that Regulation, whether they are used in industrial processes or day-to-day products, as well as products made of those substances. Moreover, REACH establishes obligations for the entirety of the supply chain. In general, to comply with REACH, companies must identify and manage the risks linked to the substances they manufacture and market in the EU: they have to demonstrate to the European Chemical Agency (ECHA) how the substances can safely be used and must communicate risk management measures to users. If the risk cannot be managed, ECHA, together with the Commission and Member States, can ban hazardous substances or decide to restrict a use or make it subject to prior authorisation.

Regarding registration, companies are required to communicate registration dossier containing hazard information and, where relevant, an assessment of the risks that the use of substance may pose and how these risks should be controlled. Registration applies to substances on their own, substances in mixtures and certain cases of substances in articles. Chemical substances that are already regulated by other legislations such as medicines, or radioactive substances are partially or completely exempted from REACH requirements. Registration is based on the ‘one substance, one registration’ principle, which means that manufacturers and importers of the same substance have to submit their registration jointly. It should be noted that there is a special transitional regime for substances, known as ‘phase-in’ substances, which were already manufactured or placed on the market before REACH entered into force: the deadline for registering substances manufactured or imported

---

75 C-461/13, Bund für Umwelt und Naturschutz Deutschland e.V. v. Bundesrepublik Deutschland, ECLI:EU:C:2015:433.
76 Ibidem, Article 10.
77 Ibidem, Article 4(1)(a)(i).
78 Cited above.
79 Ibidem, Title I, Chapter 1.
80 REACH Title II, Chapter 2.
81 REACH Title II, Chapters 1 and 2.
82 Ibidem.
83 REACH Title II.
at 1-100 tonnes per year is 31 May 2018. The obligation to register substances falls on: the EU manufacturer or importer of substances on their own or in a mixture; EU producers or importers of articles meeting the criteria set out in the Guidance on requirements for substances in articles; and ‘only representatives’ established in the EU and appointed by a manufacturer, formulator or article producer outside the EU to fulfil the registration obligations of importers.

ECHA and Member State representatives then evaluate the information submitted by companies to examine quality of the registration dossiers, any testing proposals, and to clarify whether a given substance constitutes a risk to human health or the environment.

A possible consequence of evaluation is that a substance is required to be authorised. The authorisation procedure aims at assuring that the risks from substances of very high concern (SVHCs) are properly controlled and that these substances are progressively replaced by suitable alternatives. SVHCs are those: meeting the criteria for classification as carcinogenic, mutagenic or toxic for reproduction (CMR substances); are persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB); or are identified on a case-by-case basis, for which there is scientific evidence of probable serious effects that cause an equivalent level of concern as with CMR or PBT/vPvB substances.

It has recently been clarified that ECHA’s decisions to identify substances as SVHCs produces legal effects in relation to third parties because they give rise, among other things, to information obligations. After a two-step regulatory process, SVHCs may be included in the Authorisation List and become subject to authorisation. These substances cannot be placed on the market or used after a given date, unless an authorisation is granted for their specific use, or the use is exempted from authorisation. Manufacturers, importers or downstream users of a substance on the Authorisation List can apply for authorisation. Moreover, Member States, or ECHA on request of the Commission, can propose restrictions, that is to say limiting or banning the manufacture, placing on the market or use of a substance,
if it is felt that a risk needs to be addressed on an EU-wide basis.\textsuperscript{97} A restriction applies to any substance on its own, in a mixture or in an article, including those that do not require registration.\textsuperscript{98} It can also apply to imports.\textsuperscript{99} ECHA can also propose a restriction on articles containing substances that are in the Authorisation List.\textsuperscript{100} In the course of the restriction process, ECHA works with experts from the Member States to provide scientific opinions on any proposed restriction that will help the Commission, together with the Member States, to take the final decision.\textsuperscript{101}

iv Solid and hazardous waste

The overarching regime for the EU’s regulation of waste is the Waste Framework Directive.\textsuperscript{102} The definition of ‘waste’ for the purpose of the Directive is crucial as the Directive’s prescriptions and regulatory controls only apply to waste, but this also creates difficulties. Waste is defined in the Directive as ‘any substance or object which the holder discards or intends or is required to discard’.\textsuperscript{103} In its Guidance on the Interpretation of the Waste Framework Directive, the Commission gives examples in respect of the three alternatives of ‘discarding’:

\begin{enumerate}
\item ‘discard’ includes items thrown into a waste bin or the transfer of material from a company to a waste collector;
\item ‘intention to discard’ includes an operating site that indicates that it will send off-site for appropriate disposal or recovery any of its stock of raw materials that cannot be returned; and
\item ‘requirement to discard’ includes stockpiles of banned pesticides that must be discarded and therefore must be managed as waste.
\end{enumerate}

The Directive makes certain exclusions from the scope of waste, such as gaseous effluents emitted into the atmosphere, land \textit{(in situ)}, and uncontaminated soil.\textsuperscript{104} It also excludes from its scope certain materials to the extent they are covered by other EU legislation – including, wastewater, animal by-products and carcasses, and mining waste.\textsuperscript{105} By-products of industrial processes also do not constitute waste if further use of the substance or object is certain, can be used directly without any further normal industrial processing, is produced as an integral

\textsuperscript{97} REACH Title VIII.
\textsuperscript{98} Ibidem.
\textsuperscript{99} Ibidem.
\textsuperscript{100} Ibidem.
\textsuperscript{101} Ibidem.
\textsuperscript{102} Cited above.
\textsuperscript{103} Ibidem, Article 3(1); the definition of ‘waste’ has been subject to extensive and complex interpretation by the CJEU, as well as national courts, from the late 1980s to the present day, in particular as to the meanings of ‘discard’, ‘intention to discard’ and ‘requirement to discard’.
\textsuperscript{104} Wastewater Framework Directive, Article 2.
\textsuperscript{105} Ibidem.
part of the production process and further use is lawful.\footnote{106} Finally, material ceases to be waste if it meets certain ‘end-of-waste’ criteria, such as whether a market exists for the material, or if it has undergone a recovery, including recycling, operation.\footnote{107}

The fundamental obligations on Member States in respect of waste under the Directive are twofold. Firstly, they must take measures to ensure that waste management is carried out without endangering human health or without harming the environment.\footnote{108} Secondly, they must take measures to prohibit the abandonment, dumping or uncontrolled management of waste.\footnote{109} The Directive also shapes waste policy in Member States by setting out a ‘waste hierarchy’, which provides ‘a priority order in waste prevention and management legislation and policy’.\footnote{110} In descending order, the hierarchy is: waste prevention; preparing for reuse; recycling; other recovery such as energy recovery; and disposal. Waste management obligations on Member States, which apply in respect of waste producers or other holders, are also set out.\footnote{111}

Stringent controls for hazardous waste (including, among other things, waste which is oxidising, flammable, toxic, ecotoxic, carcinogenic, mutagenic, corrosive or infectious) are also applied.\footnote{112} Hazardous waste cannot be mixed or diluted, unless a business has a waste management permit, the operation conforms to the best available techniques and there is no increased adverse impact on human health or the environment.\footnote{113}

Recent CJEU cases have shown that certain Member States have not only failed to implement the Directive, but also have failed to comply with CJEU judgments resulting from infringement proceedings (see Section III, supra) requiring them to adopt necessary measures to act in accordance with the Directive.\footnote{114} Finally, it should be noted that the Waste Framework Directive has a series of daughter directives: producer responsibility regimes such as under Packaging Waste Directive\footnote{115} and the End-of-Life Vehicles Directive,\footnote{116} and a separate Waste Shipment Regulation.\footnote{117}
v Contaminated land

Land contamination is not regulated at EU level. The Commission had proposed a Soil Framework Directive in September 2006 aimed at filling this gap and providing a common strategy for the protection and sustainable use of soil.118 However, after almost eight years without the proposal being enacted into legislation, the Commission withdrew it in April 2014, with the aim of proposing legislation again in the future.119

VII CLIMATE CHANGE

The EU considers itself to be a global leader in limiting emissions, decarbonising economies, and other measures to limit global warming. To this end, the EU has signed the UNFCCC and Kyoto Protocol, along with its Member States, and has taken a leading role in climate change negotiations (including forming a high ambition coalition in the Paris Agreement negotiations).120

Internally, the EU has adopted as a central policy the ‘2030 Climate and Energy Package’,121 a range of climate change measures with three key targets: achieving a 40 per cent cut in greenhouse gas emissions (from 1990 levels), 27 per cent of EU energy from renewables and 27 per cent improvement in energy efficiency.

The package includes the Renewable Energy Directive,122 which sets binding national renewable energy targets for Member States, and the Energy Efficiency Directive.123 In addition, an Effort Sharing Decision124 sets differential caps for Member State emissions from sectors falling outside the EU emissions trading scheme, amounting overall to a 10 per cent cut in those emissions by 2020, and the Carbon Capture and Storage Directive125 establishes a legal framework for environmentally safe geological storage of CO₂.

119 Ibidem.
The centrepiece of the EU’s environmental and climate change regime is the EU emissions trading scheme (EU ETS). More than 11,000 power stations and industrial plants in 31 countries (28 EU Member States and three EEA/EFTA states), as well as from aviation activities, fall within its scope of greenhouse gas emissions reduction. In practice this means that the EU ETS covers around 45 per cent of the EU’s greenhouse gas emissions. In the simplest terms, the EU ETS is a ‘cap and trade’ system. It works by putting a limit on overall emissions from industry sectors emitting high levels of greenhouse gases, and the limit is reduced over time. Within that limit, companies may buy and sell emission allowances as needed. Each allowance represents the right to emit one tonne of carbon dioxide equivalent (CO₂e) emissions. The number of allowances issued determines the volume of emissions permitted, and in that way emissions are ‘capped’. The idea is that the cap – and thus emissions – is reduced over time. Allowances are distributed, by allocation or auction, to installations and can be freely traded on the market. Each year, installations must surrender allowances equivalent to the amount of CO₂e emitted. In this way, the price is (at least partially) determined by the market.

For installations to receive free allowance allocations, they must meet the relevant sector’s benchmarks. For those installations that are not at a significant risk of carbon leakage, free allowances decline annually, to 30 per cent of all allowances in 2020 and no free allowances available in 2027. The power generation sector is not eligible for free allocation, except under special conditions in few Member States.

As of 2018, a market stability reserve will be established that will start operating in January 2019 and that aims to address the current surfeit of allowances and make the EU ETS resilient to shocks by allowing the supply of allowances to be auctioned to be subject to adjustment. Phase 4 of EU ETS for 2021 to 2030 has been proposed by the Commission and will be adopted by the Council and European Parliament in the coming year.

VIII OUTLOOK AND CONCLUSIONS

As part of the EU’s holistic approach to environmental sustainability, and in order to implement the EU’s 2030 climate and energy framework, the Commission introduced a ‘Clean Energy For All’ Package on 30 November 2016, also known as the Winter Package, which contains

127 Notably CO₂, N₂O, methane, HCFCs, and PFCs.
130 Ibidem, Article 10. Allowances are either auctioned or allocated for free to address international competitiveness concerns of industry sectors that are deemed to be exposed of carbon leakage under the EU ETS Directive.
131 EU ETS Directive, Article 3 and Article 5-7.
132 EU ETS Directive, Article 10(a)(12).
133 EU ETS Directive, Article 10(a)(11).
eight proposals, covering energy efficiency, renewable energy, the design of the electricity market and governance rules for the Energy Union, as well as buildings and transport.\textsuperscript{136} The Commission considers that these proposals will elevate clean energy as the prime growth sector for the future in the EU. With the Paris Agreement ratified and COP22 recently completed, the EU continues to chart its course for a low-carbon economy, with a global effort alongside. Financing climate adaptation and stabilising global temperatures is only a small part of the EU’s environmental challenges in the new global economy. Climate change, globalisation and demographic change have the potential to ‘profoundly change the context of policy-making in the future’.\textsuperscript{137} The EU’s plan beyond 2020 must reflect this.\textsuperscript{138}

\begin{itemize}
\item \textsuperscript{137} www.eea.europa.eu/environmental-time-line/the-next-50-years, accessed 12 December 2016.
\item \textsuperscript{138} http://ec.europa.eu/environment/action-programme, accessed 14 December 2016.
\end{itemize}
Chapter 6

GERMANY

Dirk Uwer and Moritz Rademacher

I INTRODUCTION

Under the Basic Law for the Federal Republic of Germany (GG), the protection of the natural foundations of life and animals is a fundamental state objective. Mindful also of its responsibility towards future generations, the state shall protect the natural foundations of life and animals through legislation and, in accordance with law and justice, by executive and judicial action (Article 20a GG). Although this principle was embedded in the German Constitution no earlier than in 1994, the German state as well as the German federal states have had a long tradition of environmental protection. This is particularly the case regarding the prevention of harmful effects of industrial installations on air, water and soil, the remediation of contamination as well as the use, storage, transport and disposal of hazardous substances.

Whereas environmental law has evolved consecutively and changed in an evolutionary manner (e.g., regarding specific areas of protection), climate change prevention has triggered rather systematic changes, especially in (environmental) energy law. Accordingly, climate protection is a key justification in the German ‘energy turnaround’, which aims to phase out nuclear energy, reduce fossil energy sources and promote renewable energy sources.

In general, German climate protection efforts concentrate on five greenhouse gas intensive sectors: energy, transport, agriculture, industry and trade, and buildings. Whereas the main focus of German climate protection efforts has for a long time been on the energy sector, current discussions increasingly include emission targets for the transport and agricultural sector. After months of political discussions, the German government recently adopted the Climate Action Plan 2050, which aims for near greenhouse gas neutrality by the middle of the century.

1 Dirk Uwer is a partner and Moritz Rademacher is a senior associate at Hengeler Mueller Partnerschaft von Rechtsanwälten mbB.
II LEGISLATIVE FRAMEWORK

No different from any other Member State environmental law within the European Union, EU directives have had great influence on German environmental law. EU regulations such as the EU Chemicals Regulation 1907/2006 (REACH) and the EU Eco-Management and Audit Regulation 1221/2009 (EMAS III) form part of the supranational environmental law directly applicable in Germany. With specific regard to German laws and regulations on environmental protection and climate change discussed in this chapter, it should first be noted that these laws are manifold and not comprehensively codified. The reasons are primarily of a historic nature and based on the division of legislative powers for environmental law between the German federation on the one hand and the 16 federal states on the other hand. For the most part, the different laws focus on particular subjects of protection (i.e., air, soil and water) or sources of hazards (e.g., industrial installations). Some laws have more comprehensive legal objects, such as nature conservation or liability for environmental damage in general. Environmental laws are often further specified in more detail in related ordinances as well as administrative regulations.

Most important for industrial installations is the German Federal Emission Control Act (BImSchG), which regulates various kinds of industrial facilities. Environmental protection is already taken into account for the construction permits of these installations, in particular in connection with the provisions of the Environmental Impact Assessment Act and the Federal Nature Conservation Act. Regarding the operation of such facilities, the BImSchG aims to protect the environment from air or water pollution, noise emissions, vibrations and comparable harmful impacts mainly by limiting or avoiding emissions. Currently 30 ordinances specify, in particular, technical details of the basic duties under the BImSchG. Of great practical importance, in particular regarding emission thresholds, are also two administrative ordinances: the Technical Guidelines on Noise as well as the Technical Guidelines on Air Quality. The European framework for trading of greenhouse gas emissions is transposed in the Greenhouse Gas Emission Allowance Trading Act (TEHG), which links environmental protection to climate protection by establishing a cap and trade system for the amount of permitted emissions. The German Act on Carbon Capture and Storage, however, has hardly gained any practical relevance for the reduction of greenhouse gas emissions yet.

In addition to protection and prevention efforts, liability for nevertheless present or occurring contamination of soil and groundwater is governed by the Federal Soil Protection Act (BBodSchG) and by the Federal Water Act (WHG) as well as water laws of the federal states. The BBodSchG particularly applies to harmful soil changes and contaminated sites, whereas the water laws apply to significantly detrimental changes to bodies of water. In addition, environmental damage caused by business activities potentially dangerous to the environment may result in liability under the Federal Environmental Damage Act. Operators of certain installations may also be liable for damage (including third-party damage) caused by their facility under the Environmental Liability Act.

Manufacturers and importers as well as downstream users of specific substances are further subject to restrictions regarding the use, distribution and labelling as well as registration of these substances pursuant to the Chemicals Act (ChemG), the Chemicals Prohibition Ordinance (ChemVerbotsV) and the Ordinance on Hazardous Substances (GefahrstoffVO), which largely make reference to European law. The handling and disposal of waste is regulated by the Waste Management Act (KrWG) and various related ordinances.

In addition to the above-mentioned TEHG, climate protection targets are part of several sector-specific laws and regulations aiming to reduce greenhouse gas emissions,
and promote renewable energy and energy efficiency. In the energy sector this includes, in particular, the recently amended Energy Industry Act (EnWG) setting out basic principles of energy law, the recently revised Renewable Energy Sources Act (EEG), which promotes electricity generation from renewable energy sources, and the Combined Heat and Power Act (KWKG) on promotion of combined heat and power technology (CHP).

III THE REGULATORS

As German environmental law consists of different laws on the federal level as well as on the level of the federal states, different authorities are competent to enforce environmental and climate change rules. Supreme authorities on both federal and state level are the respective ministries for environmental protection as well as energy. Noteworthy are, in particular, the Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety as well as the Federal Ministry for Economic Affairs and Energy, which – in their respective areas of responsibility – supervise the general administrative tasks of the higher federal environmental authorities, such as the Federal Environmental Agency, the Federal Agency for Nature Conservation and the Federal Office for Economic Affairs and Export Control. The same applies for the higher environmental authorities of the federal states.

In some areas of environmental law, such as mid- and long-term disposal of nuclear waste and radiation protection, special environmental authorities, such as the Federal Office for Radiation Protection, enforce compliance with the provisions of these particular regulations. On the level of the federal states the further sub-structure of environmental agencies differs. In some federal states, such as North Rhine-Westphalia, regional governments are, inter alia, competent for larger projects, such as power plants, and supervise the administration of the local environmental authorities. Other federal states, such as Lower Saxony, changed the three-tier administrative structure into a two-tier structure. In this more localised structure trade and industry authorities are competent, for example, for permits under the BImSchG.

Where environmental authorities have to enforce environmental rules against other parties (see Section IV, infra), the administrative courts ultimately decide whether or not any administrative order, sanction or decision on fees or costs is lawful and has to be complied with. However, more often than not such disputes are settled at the administrative level.

IV ENFORCEMENT

Environmental, technical, health and safety standards have increased and multiplied in recent years under German law, in particular, based on the implementation of European Union standards. This exposes operators of industrial plants, managing directors as well as employees to liability risks at different levels ranging from reputational damage and civil liability to administrative sanctions and criminal punishment.

Environmental obligations regularly address the operator of an installation and, therefore, the respective company. In case of violations of such environmental obligations operators of industrial plants will mainly face administrative sanctions as well as civil claims under the law of torts brought by third parties who suffered damage to their protected rights (body, health, property). In addition to imposing administrative fines, the competent authority may also suspend or revoke permits and prohibit non-compliant activities and order remediation measures. Managing directors and other individuals involved in violations of environmental standards may face (external and internal) civil claims and criminal
charges. By contrast, German criminal law does not yet recognise criminal responsibility of corporations. However, administrative fines can be imposed on corporations, if a person has committed an administrative offence, which also violated duties of the respective company or worked for the benefit of that company.

 Whereas most infringements of environmental law are dealt with by administrative offences law, criminal sanctions in connection with violations of environmental obligations may result from general criminal offences, such as offences against bodily integrity or damaging property as well as specific environmental criminal offences. The latter, inter alia, prohibit pollution of water, soil and air, unauthorised dealing with dangerous waste, unauthorised operation of an industrial plant requiring a permit under the BImSchG or endangering areas requiring protection such as water protection areas. Particularly serious cases of environmental crime, such as acting out of greed, are punished with imprisonment of not less than six months and up to 10 years. However, environmental criminal offences depend on the infringement of applicable environmental law. Consequently, acting in accordance with public environmental law or a permit or beneficial administrative act cannot constitute a criminal offence.

V REPORTING AND DISCLOSURE

In Germany, there is no general legal obligation to provide the authorities with contamination-related information. However, specific notification requirements especially exist in the (partially different) laws of the federal states. In general, the polluter, his or her universal legal successor, the current or former owner and the occupant have to notify the competent authority of indications of contamination of real property. Similar obligations apply in case of release of substances hazardous to water. Facilities handling substantial quantities of harmful substances, inter alia, have to report to the competent authority explosions, inflammations or release of a certain amount of hazardous substances, damages to persons or real estate and certain direct damages to the environment.

 Without constituting a notification requirement in the strict sense, the notification of a present or ongoing contamination to the authorities can, under certain circumstances, also be a means to avoid or mitigate responsibility under criminal law. There is, however, no particular protection for whistle-blowers under German law. Related legislative initiatives have never been adopted because the federal government considers that existing labour law regulations provide sufficient protection in such cases. Obligations for companies to implement whistle-blower hotlines while at the same time protecting confidentiality exist, for example, in the financial sector but not regarding environmental matters.

 Potential disclosure obligations in relation to prospective purchasers are subject to civil law. Not disclosing known or suspected environmental liabilities may amount to fraudulent misrepresentation and thereby give cause for annulment of a contract. Unknown environmental liabilities may trigger warranty rights subject to contractual arrangements.

 Regarding financial reporting obligations environmental incidents may gain such financial importance for the performance of a company that they have to be mentioned in corporate reports in accordance with general reporting standards. Major corporations additionally have to report on environmental matters in their situation report, including environmental protection strategies and programmes, preventive measures, compliance with environmental standards, use of energy and water as well as emissions and waste management.
VI ENVIRONMENTAL PROTECTION

i Air quality

The protection of air quality is foremost subject to maturely developed emissions law. Under the BImSchG, the construction and operation of facilities that are particularly likely to cause harmful effects to the environment or otherwise endanger or cause significant disadvantages or significant nuisances to the general public or the neighbourhood, require a specific emission permit. The main criteria determining the permit requirements are the materials used or produced and the functions of the facilities as well as the production volumes. The respective facilities are listed in the Fourth Ordinance Implementing the Federal Emissions Control Act (4 BImSchV). The Technical Guidelines on Air Emissions specifies emission values for all relevant airborne pollutants. Some federal states have also developed guidelines for odour emissions to establish presence of odour nuisances. The competent authority shall periodically monitor emissions of plants (Sections 44 ff., 40 BImSchG), for example, regarding air pollution caused by traffic. In this case the competent authority may restrict or prohibit the use of motor vehicles.

The permit under the BImSchG does not only cover emissions originating from the respective plant but also other public law requirements, in particular under building law (the ‘concentration effect’). The permit typically contains collateral clauses and regulations specifying the content of the permit. A modification or alteration of an existing plant must either be notified to the authority or – in case of material alterations – will require a new permit.

If an emitting plant is constructed, altered or operated without the required permit, the competent authority may order the operator to shut down or even demolish the plant. In addition, the operator's misconduct may constitute a criminal offence. If an operator holds a permit but does not comply with the applicable requirements, the competent authority may order remedial measures by way of a subsequent order or may prohibit the operation of the plant. In the event an operator or owner finally ceases the operation of a plant, he or she is obliged to take necessary measures to return the site to a satisfactory state, for example, by demolishing the installations.

ii Water quality

Water quality in Germany is, inter alia, protected by the provisions of the WHG. Under this act, installations for handling substances hazardous to water must be built and operated in such a manner that no contamination of water or any other detrimental change of its properties is to be feared. Currently, specific technical requirements for such installations including reporting and safety requirements are regulated by the Ordinances on Installations for the Handling of Substances Hazardous to Water of the federal states, whereas the obligations of operators are regulated in the Ordinance on Installations for the Handling of Substances Hazardous to Water.

Installations handling substances hazardous to water must be tested and classified with respect to their properties. Substances are classified on the basis of the Administrative Regulation on the Classification of Substances Hazardous to Waters. According to this regulation, there are three water hazard classes (WGK):

\[
\begin{align*}
a & \quad \text{WGK 1: a low hazard;} \\ b & \quad \text{WGK 2: a hazard;} \\ c & \quad \text{WGK 3: a severe hazard.}
\end{align*}
\]
iii Chemicals
Under German law, a company that handles, stores or uses chemicals and other hazardous substances, in particular explosive, oxidising, flammable or toxic substances, has to comply with certain safety regulations and provide safety measures as stipulated in the above-mentioned ChemG, ChemVerbotsV, GefahrstoffVO, the Technical Rules for Hazardous Substances, the Industrial Safety Ordinance and the Technical Rules for Safety in Work Places.

A company storing hazardous substances has to prepare a comprehensive risk assessment determining the necessary occupational safety measures for the working place described. For example, hazardous substances have to be stored in containers that cannot be mistaken for containers containing food regarding the packaging (label, shape). The employer also has to appoint a duly qualified responsible person observing compliance with labour safety and protection regulations.

Facilities handling substantial quantities of harmful substances are also subject to the additional requirements of the Ordinance on Hazardous Incidents including precautions to prevent hazardous incidents and enhanced safety measures as well as notification and reporting obligations. To this end, the Ordinance provides a general concept to prevent major accidents in such areas. The operator has to develop an individualised concept, including a safety management system, to prevent major accidents before starting to operate the respective facility. In addition, the operator might be subject to increased duties, for example, to submit a safety report and an alarm and hazard control plan and to fulfil certain information requirements.

The transport of dangerous goods is also subject to special regulations under German law including the Dangerous Goods Transportation Act (GGBefG) and several ordinances. The transport of dangerous goods is generally only permitted if all required safety regulations are fulfilled. A safety adviser has to be appointed if a company takes part in the transport of dangerous goods by railroad, aircraft, sea or land vehicles.

iv Solid and hazardous waste
German waste law as provided by the KrWG and various ordinances regulates the handling and disposal of waste. According to the KrWG waste firstly has to be avoided and secondly has to be recycled or recovered or be used to produce energy. Waste that is not recycled has to be disposed of in accordance with basic principles of waste management guided by public interest. To ensure such disposal, records of proper waste management have to be prepared.

Special regulations apply to the disposal of certain waste substances not regulated by the KrWG (e.g., nuclear fuel and radioactive substances or wastewater, which is subject to the national and federal water laws).

v Contaminated land
The liability for environmental contamination is mainly governed by the BBodSchG and by the federal and state water laws. The BBodSchG particularly applies to harmful soil changes and contaminated sites, such as former waste disposal and industrial sites. Harmful soil changes within the meaning of the BBodSchG are harmful impacts on soil functions that are able to bring about hazards, considerable disadvantages or considerable nuisances for individuals or the general public. This damage may be caused by contamination, but also by a compression or dehydration of the soil. The BBodSchG applies to all currently existing known and (still) unknown and all future harmful soil changes.

The BBodSchG stipulates a general remediation liability irrespective of involvement, fault or knowledge of such contamination. This responsibility applies to (1) the polluter,
(2) his or her universal legal successor, (3) the current owner, (4) the current occupant of the real property (e.g., the lessee), (5) persons or entities that, under commercial or corporate law, must answer for an entity that owns contaminated real property, and (6) persons or entities that gave up ownership of such properties. The competent authority may decide which person or entity shall be held liable for remediation measures. Such decision is subject to the authority’s discretion, guided by the consideration of which party will be able to carry out remediation most efficiently. This applies regardless of private law agreements about the responsibility for contamination, as can be found, for example, in lease contracts.

As soon as contaminated soil is excavated in the course of construction or remediation works, it no longer falls within the scope of the BBodSchG. Instead, it may qualify as waste pursuant to the KrWG, which may result in additional disposal costs.

VII CLIMATE CHANGE

Based on the global trend of decarbonisation, international and European law have had great influence on German climate protection regulations. However, an independent discipline of climate protection law is still being developed in Germany. Accordingly, climate protection is not comprehensively regulated. Several environmental laws have rather identified climate protection as an objective of the relevant legislation and either aim to reduce greenhouse gas emissions, energy efficiency or the promotion of renewable energies to facilitate and protect that objective.

i Greenhouse gas emission allowance trading system

The reduction of greenhouse emissions is primarily achieved by means of the TEHG. Under these regulations, an installation emitting greenhouse gases from activities listed in Annex 1 TEHG requires a greenhouse gas emissions permit. This particularly concerns conventional power generation and other industrial activities such as the production of cement clinker and lime or dolomite in rotary kilns or other furnaces with a certain production amount, but also air traffic. If a permit in terms of the BImSchG has been issued prior to 1 January 2013, this permit also constitutes the required emission permit. Otherwise a separate emissions permit is required.

Operators of emitting installations have to cover their actual greenhouse gas emissions by emissions certificates. These allowances are issued as tradable rights so that the beneficiary may either sell surplus allowances or obtain additional allowances if required. For the third emissions trading period from 2013 to 2020 the allocation of emissions allowances is subject to the Allocation Ordinance 2020. Compared to the previous two trading periods, this ordinance has reduced the general national cap for emission allowances as well as the number of emission allowances allocated to the operators free of charge. The number of auctioned allowances on the other hand has generally been increased. In the energy sector all allowances have been auctioned since 2013.

Emission allowances have to correspond to an annual emission report, which has to be submitted by the operators to the competent authority by 31 March of each year. If an operator exceeds the annual volume of emissions contained in the allowances and fails to buy the required additional volume, a fine of €100 per tonne of greenhouse gas emitted will be imposed on him or her and his or her name will be published accordingly.

Part of the efforts to reduce greenhouse gas emissions in the energy sector is also the recently effected transfer of specific lignite power plants into a remunerated reserve position for four years, followed by the final shutdown of operations under the revised EnWG.
ii  Promotion of renewable energy sources

Greenhouse gas emissions, in particular in the energy sector, are indirectly being reduced by the promotion of electricity production from renewable energy sources. In recent years, the renewables share within the overall production of electricity in Germany has increased to approximately 33 per cent in 2015 and is envisaged to further increase to 40 to 45 per cent in 2025, 55 to 60 per cent in 2035 and at least 80 per cent in 2050.

In Germany, different statutory support mechanisms have been in place since 1991. Since 2000 the applicable regulations have been set out in the EEG. The type and amount of support generally depend on the time the installation first commenced operation and the type of renewable energy. Although the promotion system has been changed constantly, the applicable legal framework for a renewable energy installation is being grandfathered for a period of 20 calendar years plus the year in which the installation was commissioned. By consequence, different promotion systems apply to different installations. However, there are four main types of promotion schemes: (1) fixed feed-in tariffs, (2) voluntary direct marketing with market premium, (3) mandatory direct marketing with market premium, and (4) tender procedures with a ‘pay-as-bid’ remuneration.

Until 2012, fixed feed-in tariffs were the only applicable statutory support scheme. These tariffs are paid to the operators of the installation by the connecting grid operators and ultimately charged to the end customers in form of the so-called EEG levy. Beginning with the EEG 2012, operators of RES installations can also opt to sell their electricity directly to third parties. Any shortfall of the technology specific market values compared to the statutory feed-in tariffs is compensated through a market premium. While direct marketing was optional under the EEG 2012 and remains optional for existing installations, it became mandatory for most new installations under the EEG 2014 in order to facilitate further integration of renewable energies into the electricity market. Finally, under the recently revised EEG 2017, funding shall no longer be based on fixed statutory tariffs from 1 January 2017 onwards, but rather be subject to an auctioning system resulting in a ‘pay-as-bid’ remuneration.

The promotion of offshore wind installations will be separately regulated in the Wind Offshore Act, which prescribes two auction procedures in 2017/2018 for an interim period for installations commencing operation between 2021 and 2025. From 2021 onwards, annual auctions will be held for projects commencing operations from 2026 onwards. In this so-called Danish model the competent authority will determine and pre-evaluate specific areas for offshore wind farms and bidders will compete in the auction for the right to construct an offshore wind farm in the designated areas.

In addition to the EEG, the Act on the Promotion of Renewable Energies in the Heat Sector promotes the use of renewable energy sources for the production of heat also with the aim of reducing the use of fossil fuels. The promotion is mainly in the form of obligations to use renewable energy sources in new houses and – depending on the laws of the federal states – also in existing buildings. Such use is also partly state-funded.

In the transport fuel sector the use of renewable energy in the form of biofuels is promoted by tax allowances and a mandatory marketing quota of biofuels for oil companies under the BImSchG.

iii  Energy efficiency regulations

Energy efficiency is another way of indirectly reducing greenhouse gas emissions. An important part of energy efficiency is the utilisation of heat generated in the regular process of electricity production via the promotion of CHP installations. Whereas CHP based on
renewable energies is promoted under the EEG, CHP based on fossil fuels is promoted by the KWKG. Operators of CHP plants receive a bonus on their electricity production per kWh, which is ultimately charged to the end customers in form of the KWKG levy.


iv Climate protection on the level of the federal states

Based on the international, European and national regulations regarding climate protection several of the German federal states have adopted climate protection plans and some have also adopted climate protection acts, such as the Climate Protection Act North Rhine-Westphalia. Under this act, greenhouse gas emissions in North Rhine-Westphalia shall be reduced by at least 80 per cent until 2050 compared to the year 1990. Currently, the government of North Rhine-Westphalia is working on a climate protection plan in order to implement this goal.

VIII OUTLOOK AND CONCLUSIONS

Already in 2010, the German federal government decided to reduce greenhouse gas emissions until 2050 by 80 to 95 per cent compared to 1990. On 14 November 2016 the German federal government then adopted the Climate Action Plan 2050 following a broad and controversial political and social debate. The plan outlines how Germany plans to achieve extensive greenhouse gas neutrality by the middle of the century. The plan defines a number of key areas for specific action (i.e., energy, building, transport, trade and industry, and agriculture and forestry) with both guiding principles until 2050 and milestones and targets for 2030.

For the first time, the Climate Action Plan 2050 sets sectoral targets for emissions reduction, which will, however, be subject to an impact assessment in 2018 and, thus, be adapted in the future.

<table>
<thead>
<tr>
<th>Area of action</th>
<th>1990 (in million tonnes of CO₂ equivalent)</th>
<th>2014 (in million tonnes of CO₂ equivalent)</th>
<th>2030 (in million tonnes of CO₂ equivalent)</th>
<th>2030 (reduction in % compared with 1990)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy sector</td>
<td>466</td>
<td>358</td>
<td>175–183</td>
<td>62–61%</td>
</tr>
<tr>
<td>Buildings</td>
<td>209</td>
<td>119</td>
<td>70–72</td>
<td>67–66%</td>
</tr>
<tr>
<td>Transport</td>
<td>163</td>
<td>160</td>
<td>95–98</td>
<td>42–40%</td>
</tr>
<tr>
<td>Industry</td>
<td>283</td>
<td>181</td>
<td>140–143</td>
<td>51–49%</td>
</tr>
<tr>
<td>Agriculture</td>
<td>88</td>
<td>72</td>
<td>58–61</td>
<td>34–31%</td>
</tr>
<tr>
<td>Subtotal</td>
<td>1209</td>
<td>890</td>
<td>538–557</td>
<td>56–54%</td>
</tr>
<tr>
<td>Other</td>
<td>39</td>
<td>12</td>
<td>5</td>
<td>87%</td>
</tr>
<tr>
<td>Total</td>
<td>1248</td>
<td>902</td>
<td>543–562</td>
<td>56–55%</td>
</tr>
</tbody>
</table>

Source: Federal Ministry for Environment, Nature Conservation, Building and Nuclear Safety

The Climate Action Plan 2050 has so far not specified how exactly these aims will be achieved. To this end, the federal government will establish a commission to integrate the expertise of
the governments of the federal states as well as the municipalities, trade unions, company and industry experts. This commission will develop annual action programmes to specify the milestones and targets of the Climate Action Plan 2050.

In general, the Climate Action Plan 2050 aims to further develop energy standards in both new buildings and existing stock undergoing renovation as well as the promotion of heating systems based on renewable energy sources. Road transport will in particular have to take into account electric mobility. The German government and the industry shall work together regarding research and development programmes in order to reduce greenhouse gas emissions. Expanding the forest area and improving regulations for fertilisation are further measures. Regarding the energy industry, it remains a goal of the federal government to completely decarbonise electricity production until 2050. However, specific steps for the reduction of coal-fired power generation were eventually not included in the plan. This is one of the major differences to the originally stringent targets in the draft versions of the plan. The same is true for refraining from further investments in coal mines and a minimum price for emission certificates.

Germany has always considered itself a frontrunner for climate protection. However, the latest climate protection report shows that Germany will likely miss its aim to reduce the annual greenhouse gas emissions by 40 per cent by 2020 to 44 millions tonnes. While the climate aims remain ambitious, their realisation will provide a challenge not only of a political but also of a legal nature. By consequence, the Climate Action Plan 2050 will certainly trigger further legislative initiatives to adapt and further develop the current legal framework for climate protection in Germany. It is, therefore, hardly surprising that calls for a climate protection act on the federal level have become louder. Nationwide, such act would be the first of its kind.
Chapter 7

INDIA

Sanjeev Kapoor and Anushka Sharda

I INTRODUCTION

As custodians of one of the world’s fastest-growing emergent economies with pressing development and infrastructure requirements, Indian policymakers face unique challenges in balancing growth imperatives with environmental responsibilities. The government has sought to achieve this balance by creating a legal and policy landscape that facilitates ease of doing responsible business. In the past few years, the government has introduced a slew of environmental regulations in consultation with diverse stakeholders, ensured mandatory implementation of 24/7 real-time emission and effluent monitoring in industries, upgraded emission standards for 20 polluting industrial sectors, and taken stringent action against polluting industries including going to the extent of issuing closure notices to polluting industries. At the international stage, India has been praised for its ambitious intended nationally determined contributions (INDCs) submitted to the United Nations Framework Convention on Climate Change on 2 October 2015 seeking to, inter alia, reduce emission intensity by 35 per cent, increase the non-fossil fuel share of the energy capacity mix to 40 per cent and create a carbon sink of 2.5 billion tonnes. On the other hand, to ensure development is not hampered, the government has introduced a series of strategic measures to streamline the environmental clearance process to tackle delays in crucial development and infrastructure projects, although this has been criticised by some activists as a compromise with the environmental cause. These legal and policy measures, taken along with the active and vigilant oversight by the judiciary and specialised environmental tribunals, have given environmental law and policy a prominent position in the India growth story.

1 Sanjeev Kapoor is a senior partner and Anushka Sharda is a principal associate at Khaitan & Co.
2 Ministry of Environment, Forest and Climate Change (MoEFCC), New Initiatives and Efforts 2014–2016.
II LEGISLATIVE FRAMEWORK

The Indian Constitution is among the few in the world that contain specific provisions on environmental protection. The Constitution embodies environmental protection and promotion as a fundamental right guaranteed to Indian citizens. That apart, Article 48-A, which forms part of the Directive Principles of State Policy of India, although not enforceable as an obligation of the state, acts as the guiding principle for policy formulation and mandates that the state should endeavour to protect and improve the environment and safeguard the forests and wildlife of the country. Additionally, Article 51-A of the Constitution of India imposes a fundamental duty on every citizen of India to protect and improve the natural environment.

Apart from the general constitutional mandate on both the state and the citizens, there also exist a suite of statutes which protect and regulate various environmental aspects.

The Environment (Protection) Act 1986 (EPA) is the overarching framework legislation that deals with environmental protection in India.

Other key specialised legislation includes:

a. The Water (Prevention and Control of Pollution) Act 1974 (the Water Act) – to provide for the prevention and control of water pollution and the maintaining or restoring of wholesomeness of water.

b. The Forest (Conservation) Act 1980 – to provide for the conservation of forests.

c. The Air (Prevention and Control of Pollution) Act 1981 (the Air Act) – to provide for the prevention, control and abatement of air pollution.

d. The Biological Diversity Act 2002 – to provide for the conservation of biological diversity, sustainable use of its components and fair and equitable sharing of the benefits arising out of the use of biological resources, knowledge and for matters connected therewith or incidental thereto.

e. National Green Tribunal Act 2010 (the NGT Act) – to provide for the establishment of the National Green Tribunal for the effective and expeditious disposal of cases relating to environmental protection and conservation of forests and other natural resources including enforcement of any legal right related to the environment and giving relief and compensation for damages to persons and property and for connected or incidental matters.

These statutes, along with various rules, regulations and notifications, implement the statutory mandate to protect various other facets of the environment in India.

Two key notifications worth noting are the Coastal Zone Regulation Notification of 6 January 2011 (the CRZ Notification) and the Environmental Impact Assessment Notification of 14 September 2006 (the EIA Notification). These notifications regulate the grant of environment clearance to developmental projects in India. The CRZ Notification notifies the coastal stretches of the country and the water area up to its territorial water limit as a coastal regulation zone and primarily applies to developmental activities undertaken in

---


4 The right to a clean environment has been recognised as an integral part of right to life guaranteed under Article 21 of the Constitution of India.

5 These notifications have been issued by the central government under Section 3 of the EPA.
such zones that impact the coastal environment. The EIA Notification, on the other hand, covers any new constructions or expansion of existing projects listed in the Schedule to the Notification. The Notifications prescribe processes such as screening, scoping and evaluation of the upcoming project prior to grant of the environment clearance for the project. The main purpose of the exercise is to assess impact of the planned project on the environment and people and to try to abate or minimise the same.

III THE REGULATORS

Government agencies regulating and enforcing environmental and climate change rules in India include the following.

i The Ministry of Environment, Forest and Climate Change (MoEFCC)
MoEFCC is the nodal agency in the administrative structure of the central government of India for planning, promotion, coordination and overseeing the implementation of India’s environmental and forestry policies and programmes. The primary concerns of the Ministry are implementation of policies and programmes relating to conservation of the country’s natural resources including its lakes and rivers, its biodiversity, forests and wildlife, ensuring the welfare of animals, and the prevention and abatement of pollution.

ii Central Pollution Control Board (the Central Board)
The Central Board is a statutory organisation constituted under the Water Act and also entrusted with the powers and functions under the Air Act. The principal functions of the Central Board are to (1) advise the central government on any matter concerning prevention and control of water and air pollution; (2) execute a nationwide programme for the prevention, control or abatement of water and air pollution; and (3) coordinate the activities of the state boards and resolve disputes among them.

iii State Pollution Control Boards
Each state has a State Pollution Control Board (State Board) which is generally entrusted with the power and functions under the Water Act and Air Act and for enforcement of some of the provisions of the EPA and the Rules framed thereunder governing plastics, biomedical waste, hazardous waste, batteries, chemicals, etc. The State Boards have been given wide powers such as the power to issue closure notices to polluting industries, impose penalties, implement remediation measures for restoration of the environment, etc.

iv Other authorities
Additionally, under Section 3(3) of the EPA, the central government is empowered to appoint various authorities to carry out the functions of the central government under the Act. In furtherance of this the central government has constituted various authorities for regulating different aspects of the environment such as the Central Ground Water Authority (CGWA). The CGWA regulates and controls groundwater development and management in the country. The authority is engaged in various activities related to ensuring long-term sustainability of groundwater in India. In many states, independent authorities for regulation
of groundwater have also been constituted. For instance, in the state of Maharashtra industries are prohibited from drilling deep wells and accessing groundwater without the permission of the relevant authorities that are constituted in the state for this purpose.

Officers from the MoEFCC and Director General of Foreign Trade have been entrusted with powers and functions under The Ozone Depleting Substances (Regulation and Control) Rules 2000 for regulating ozone-depleting substances.

The Central Wetland Regulatory Authority is responsible for the conservation and management of the wetlands of the country.

v Judicial role in environment regulation

Any disputes involving environmental issues are dealt with primarily by the NGT, which is a special body constituted by the NGT Act 2010 to hear and decide environmental issues. However, environmental matters are also heard by the State High Courts and the Supreme Court of India in the form of public interest litigation and/or under their writ jurisdiction.

Although the prime role for enforcement of environment and climate change rules ought to be that of the government agencies, the NGT, State High Courts and the Supreme Court of India have been playing an active role in the field of environment as regards ensuring compliance of not only citizens and corporates but also supervising implementation of environment and pollution laws by government agencies.

IV ENFORCEMENT

i Public interest litigation

Since the 1980s, public interest litigation has been widely used as an effective tool in India to redress public grievances pertaining to unfair and unjust public policies, arbitrary actions of the government, human rights violations by the state and violation of fundamental rights guaranteed under the Constitution of India. This mechanism is typically used to address grievances that may have repercussions for a large section of the public and especially the poor and underprivileged classes of society.

A public interest litigation can be filed in the Supreme Court or the State High Courts under Article 32 and Article 226 of the Constitution of India respectively, by any person in India seeking to petition a cause, which may affect a section of the society regardless of whether the petitioner has a substantial stake in the grievance complained of or not. This remedy is also therefore often resorted to by public-spirited persons and environmental activists as regards environmental causes.

The following principles are adopted for the adjudication of cases related to environmental law:

a polluter pays principle;6
b sustainable development;7

6 The Supreme Court of India in the case of Indian Council for Enviro-Legal Action v. Union of India AIR 1996 SC 1446 has held the polluter pays principle to be a universally accepted and sound principle.
7 In Vellore Citizens Welfare Forum v. Union of India, AIR 1996 SC 2715 the Supreme Court held that, "The traditional concept that development and ecology are opposed to each other, is
c precautionary principle;

d strict liability; and

e absolute liability.  

ii Statutory/legal remedy

In 2010 the Parliament of India enacted the much overdue NGT Act to provide for effective and expeditious disposal of cases relating to the environment through the NGT. Ever since, the NGT has been playing an active and prominent role in ensuring enforcement of the provisions of the environment and pollution laws of the country mainly through the imposition of heavy penalties on erring industries and injunctioning industries from proceeding with development projects that do not have the requisite environment approvals.

To enable the effective and expeditious disposal of cases, a summary procedure for disposal of cases has been provided for. The Tribunal has been exempted from the rigours of the procedure and the rules of evidence to be followed in the adjudication of civil and criminal disputes in the country.

The NGT Act is broadly worded and provides that ‘any person’ may approach the Tribunal if it is aggrieved by an environment clearance issued to an industry for any development project, directions issued by the Pollution Control Boards under the Water Act or the Air Act, any policy decision on benefit sharing by the State Biodiversity Board, etc. Further, any person who is a victim of environment damage and whose property has been damaged, or the central government/state government/Pollution Control Boards or any local authority constituted under the EPA may approach the Tribunal for grant of relief or compensation or settlement of a dispute relating to the environment. Because of the widely worded nature of the NGT Act, many environment activists and non-government organisations who may not be directly or substantially affected by the alleged grievance but who are generally interested in the restitution of the environment, have also been given the right to approach the NGT.

The Tribunal is bestowed with the power to provide relief and compensation to victims of pollution, pass directions for restitution of damage property and the environment and further order imprisonment for a term that may extend to three years or fines of up to 250 million rupees in the case of failure of a company to comply with the orders of the Tribunal. Further, as the task of environment restoration and maintenance is heavily dependent on the government departments carrying out their functions efficiently the NGT Act also empowers the Tribunal to punish the head of the government department for non-compliance with the orders of the Tribunal.

no longer acceptable. Sustainable development is the answer.’

8  

M.C. Mehta v Union of India, AIR 1987 SC 1086: The Supreme Court departed from the English law of strict liability and evolved the principle of absolute liability. It held that an enterprise engaged in an inherently dangerous activity owes an absolute duty to the community to ensure that no harm is caused by the activities undertaken by it. Since the pronouncement of this judgment, the defence of reasonable care and absence of negligence are no longer valid defences for enterprises engaging in inherently dangerous activities to avoid liability.

9  

Section 16 of the NGT Act.

10  

Section 18 of the NGT Act.

11  

Sections 26 to 28 of the NGT Act.
The Tribunal is guided by the principles of sustainable development, the precautionary principle and the polluter pays principle in its decision-making. 

iii Remedies in criminal law
The Indian Penal Code 1860 and the Code of Criminal Procedure 1973 provide for remedies against public nuisance. Public nuisance is essentially an unreasonable interference with the general right of the public. On receipt of a complaint, the magistrate has the power to order the removal of the nuisance complained of within a time-bound period. For instance, in the case of a complaint regarding a company discharging contaminated water, the magistrate may direct the company to immediately stop such discharge, failing which the officials in charge of the company would be liable for imprisonment.

V REPORTING AND DISCLOSURE

i General reporting obligations
The Rules framed under the EPA mandate industries to submit a yearly environmental statement in Form V appended to the EPA disclosing, *inter alia*, (1) the quantity of water and air pollutants discharged by the industry, (2) the concentration of pollutants in discharges, and (3) the percentage of variants from prescribed standards with reasons. Additionally, generally the consent to operate an industry or the environment clearance granted for the development activity to be undertaken by an industry also imposes reporting obligations on the person in charge.

ii Disclosure of excessive discharge or emissions
The EPA and the Rules framed thereunder also impose an obligation on the person in charge of the place to furnish information to the concerned authorities and agencies regarding occurrence or apprehension of occurrence of discharge of environmental pollutant in excess of the prescribed standards owing to any accident or unforeseen act or event. There is a similar obligation under Section 31 of the Water Act of furnishing information to the State Board in the event there is discharge or likelihood of discharge of polluting matter in any stream pursuant to an accident or other unforeseen act or event.

Non-compliance with the reporting and disclosure obligations attracts punishment in the form of penalties and imprisonment under the EPA.

VI ENVIRONMENTAL PROTECTION

i Air quality
The Air Act in tandem with the EPA provides for the prevention, control and regulation of air quality in India. Under the Air Act, the Central and State Air Pollution Control Authority is to be exercised by the Central Board and State Board respectively.

---

12 Section 20 of the NGT Act.
The state government in consultation with the State Board has the power to declare any area as ‘air pollution control area’.\(^\text{15}\) The regime under the Air Act involves taking the prior consent\(^\text{16}\) of the State Board before establishing any industrial plant in an air pollution control area along with regular monitoring of activities through the imposition of reporting requirements. Further, enforcement is ensured through impositions of fines and imprisonment for non-compliance.

The industry or operation-specific standards for emission or discharge of environment pollutants from industry are specified in the schedules to the EPA. The EPA further enables the Central Board or the State Board to prescribe more stringent standards than those provided in the EPA provided the same can be justified by the respective boards for reasons to be recorded in writing.

ii  **Water quality**

The Water Act along with the EPA primarily deals with regulation of water resources in India. The Water Act is comprehensive and applies to streams, inland waters, subterranean waters and sea or tidal water.

There is a consent procedure whereby no industry that is likely to discharge sewage or trade effluent can commence operations without the previous consent of the State Pollution Control Board.\(^\text{17}\)

The Water Act generally prohibits disposal of polluting matter in excess of the standards established by the EPA and/or State Pollution Control Board. Industry or operation-specific standards for the discharge of effluent or the quality of the receiving waters are specified in the schedules to the EPA and/or by the Pollution Control Boards in their permits to the industries.\(^\text{18}\)

iii  **Chemicals**

The Manufacture, Storage and Import of Hazardous Chemicals Rules 1989 regulate handling and dealings in hazardous chemicals. The rules apply to industrial activities in which a hazardous chemical as specified in the schedule to the rules is involved.

Any industrial activity in which there might be a threshold quantity of a hazardous chemical is not to be undertaken without approval from the relevant authority.\(^\text{19}\)

The rules further cast an obligation on the entity who has control of such industrial activity to provide evidence to show that it has identified the major accident hazards and taken adequate steps to prevent major accidents or limit their consequences to persons (including persons working on the site) and the environment.

The rules require the occupier to notify any major accident within 48 hours to the concerned authority and thereafter furnish a report relating to the accident in instalments.

\[^{15}\text{Section 19 of the Air Act.}\]
\[^{16}\text{Section 21 of the Air Act.}\]
\[^{17}\text{Section 25 of the Water Act.}\]
\[^{18}\text{Section 24 of the Water Act.}\]
\[^{19}\text{Rule 7 of the Manufacture, Storage and Import of Hazardous Chemicals Rules 1989.}\]
in the format prescribed in the schedule to the rules. The authority concerned is in turn required to undertake full analysis of a major accident and send the requisite information to the MoEFCC.20

iv Solid and hazardous waste
The waste management rules of the country were completely revamped in 2016. As a part of this initiative the government has notified the Solid Waste Management Rules 2016 (the SW Rules) and the Hazardous and Other Wastes (Management and Transboundary Movement) Rules 2016 (the HW Rules).

The new HW Rules provide for a single window clearance for setting up a hazardous waste disposal facility and import of other wastes.21 Co-processing of waste has been given preference over disposal. The approval for co-processing of hazardous waste to recover energy has been streamlined on an emission norms basis.

The import or export of waste under the HW Rules was streamlined and the list of waste regulated for import or export has been revisited. Further, import of scrap metal, paper waste and various categories of electrical and electronic equipment for reuse purposes no longer needs the permission of the MoEFCC.

The new SW Rules introduced the concept of segregating and storing the waste generated at source in three separate streams, namely biodegradable, non-biodegradable and domestic hazardous waste, in suitable bins before the same is handed over to authorised waste collectors.22 Further, spot fining for littering and non-segregation has been introduced.

v Contaminated land
The HW Rules together with the EPA, Water Act and the rules framed by respective state governments for the regulation of ground water provide the regime for controlling and preventing contamination of land and groundwater by the disposal of hazardous wastes.

The rules impose the liability for damages caused to the environment or third party as a result of improper handling and disposal of hazardous waste on the occupier, importer, exporter and operator of a facility. The occupier and operator are also liable to financial penalties as may be levied by the state board in consultation with the Central Board.

VII CLIMATE CHANGE

With the second-largest human population of the world and around 30 per cent of the population without access to electricity, India is confronted with the serious challenge of balancing economic development and greenhouse gas emissions. In an effort to address climate change concerns and to promote sustainable development, the Indian government launched the National Action Plan on Climate Change (NAPCC) in 2008. There are eight national missions which form the core of the NAPCC. The eight missions represent multi-prong long-term and integrated strategies for achieving key goals in the context of climate change. The two most prominent missions are:

21 Rules 6 and 13 of the HW Rules.
22 Rule 4 of the SW Rules.
a Jawaharlal Nehru National Solar Mission: The mission seeks to promote solar energy by enhancing the capacity to 100GW by 2022. On 31 March 2015, a total grid connected solar power capacity of 3743.97MW was commissioned. Some of the initiatives under the mission include promotion of solar installation in 55,000 petrol pumps, of which around 3,135 petrol pumps have been completed and a scheme for the deployment of 20 million solar lighting systems for rural areas by 2022.

b National Mission for Enhanced Energy Efficiency: This mission seeks to unlock the energy-efficiency market on a public–private partnership basis. Under it, specific energy consumption targets have been set for 478 designated consumers across eight sectors. Incentivising action through trading in energy-saving certificates is envisaged under this mission.

i Mitigation measures in the energy sector
The 12th Five Year Plan released by the central government for the years 2012–2017 includes an agenda of sustainable development. A key highlight of the plan is the government’s initiative to facilitate development of ultra-mega power projects of about 4,000MW capacity. The projects are to use super critical technology, which is expected to achieve higher levels of fuel efficiency, resulting in fuel savings and lower greenhouse gas emissions.

Clean Coal Technology Initiative
Presently coal-based power accounts for about 60.6 per cent of India’s installed capacity and is expected to continue to dominate power generation in future. In order to reduce the carbon footprint of coal-based power plant the government has, inter alia, mandated all new large coal-based generating stations to use super critical technology. Further, 144 old thermal stations have been assigned mandatory targets for improving energy efficiency.

National Clean Energy Fund 2010 (NCEF)
NCEF was set up by imposing a statutory cess on coal. With effect from July 2014, the rate of cess was increased to 100 rupees per tonne and in the Union Budget of 2015–16 the cess was raised to 200 rupees per megatonne. The NCEF is to be used to promote clean energy technologies.

The Energy Conservation (Amendment) Act 2010 was introduced to issue energy-saving certificates to designated consumers whose energy consumption was less than the prescribed norms and standards. A consumer whose energy consumption is more than the prescribed norms is entitled to purchase energy saving certificates to comply with the prescribed norms.

Renewable energy targets
The target renewable energy capacity has been revised upwards to 175,000MW until 2022, comprising 100,000MW solar, 60,000MW wind, 10,000MW biomass and 5,000MW small hydro. While the NAPCC technical document recommends renewable portfolio standards of 15 per cent by 2020, the State Electricity Regulatory Commissions (SERCs) have set year-wise targets in their respective states.

Renewable purchase obligations
Further, the SERCs also issued a Renewable Purchase Obligations Regulation specifying the share of renewable energy in the electricity mix. In order to assist in meeting renewable
purchase obligations, the Central Electricity Regulatory Commission has set up the renewable energy certificate mechanism enabling the obligated entities to purchase renewable energy certificates to meet their commitments.

ii Mitigation measures in the building sector

Presently residential and commercial buildings account for 29 to 30 per cent of the total electricity consumption in India, a significant part of which goes into heating, cooling and lighting. Some of the measures taken by the government to promote energy efficiency in the building sector are as follows.

The Bureau of Energy Efficiency has developed the Energy Conservation Building Code, which prescribes the minimum standard for energy use in new commercial buildings and major retrofits. The code is voluntary at the national level and the Ministry of Urban Development and state governments are responsible for its implementation and enforcement.

LEED India is the localised version of the international rating system and is administered by the Indian Green Building Council. In 2014, there were 2,760 LEED India-registered buildings and 524 LEED certified buildings, representing 2.19 billion square feet of registered green building footprint.

A Green Rating for Integrated Habitat Assessment (GRIHA) is the national rating system for green building design, developed and implemented by the Energy and Resources Institute and the Ministry of New and Renewable Energy. All new central government and public sector buildings in India are to comply with the requirement of at least three star GRIHA ratings.

Mitigation measures in the telecommunication sector: To address climate change concerns, the Department of Telecommunication issued the following directions to licensees for implementation:

a. At least 50 per cent of all rural towers and 20 per cent of the urban towers were to be powered by hybrid power (renewable energy technologies and grid power) by 2015, while 75 per cent of rural towers and 33 per cent of urban towers are to be powered by hybrid power by 2020.

b. All telecom products, equipment and services in the telecom network had to be energy and performance assessed and certified green passport (GP) by 2015.

c. All service providers have to declare to the Telecom Regulatory Authority of India (TRAI) the carbon footprint of their network operations in the format prescribed by TRAI.

d. Service providers should adopt a voluntary code of practice encompassing energy efficient network planning, sharing of infrastructure, deployment of energy-efficient technologies and adoption of renewable energy.

e. Service providers should evolve a ‘carbon credit policy’ in line with carbon credit norms, with the ultimate objective of achieving a maximum of 50 per cent over the carbon footprint levels of the base year in rural areas, and achieving a maximum of 66 per cent over the carbon footprint levels of the base year in urban areas by 2020.

iii Mitigation measures in the transport sector

Aviation

To deal with climate change, the Director General of Civil Aviation issued five circulars addressing the use of aircraft power supply, fuel efficiency, single-engine taxi and data
reporting. One of the most important initiatives is the Circular No. 2 of 2013 requiring airlines and airports to submit fuel and electricity consumption data on a regular basis and managing their own carbon footprint.

**Auto fuel policy**

A major initiative in the transportation sector has been the upgrading of vehicular emission norms. In line with the government's Auto Fuel Policy, the oil industry introduced B–IV grade petrol and diesel in 13 notified cities and BS-III grade petrol and diesel in the rest of the country in 2010. It has also been decided that BS-V fuel quality and emission norms will be implemented in the entire country from 2019, and BS-VI emission norms for four wheelers shall be implemented from 2023.

**iv Other initiatives to combat climate change**

The new Companies Act 2013 directs companies incorporated in India with a certain level of profit to spend 2 per cent of the annual profit on corporate social responsibility activities including for environment-related causes.

India has taken action to eliminate petroleum subsidies and impose substantial taxes on petroleum products. As per the Economic Survey 2014–15, p. 38, these actions have taken India from a carbon subsidisation regime to one with a significant carbon taxation regime (i.e., from a negative price to an implicit positive price on carbon emissions).

Indian industry has also participated in voluntary carbon disclosure programmes whereby the industries report their carbon management strategy and greenhouse gas emissions. The latest report by the Carbon Disclosure Project India indicates a reduction of 165 million megatonnes of carbon dioxide equivalent by Indian industries.

**VIII OUTLOOK AND CONCLUSIONS**

Going forward, India has before it the mammoth task of achieving its many commitments as made in its INDCs and set out in its various internal plans and policies related to environment and climate change. The main bill in the arena of environment laws pending approval of the Parliament currently is the Environment Laws (Amendment) Bill 2015. This important piece of legislation seeks to amend the EPA and the NGT Act with the objective of scaling up the punishment for causing environment damage, in furtherance of a policy of deterrence and zero tolerance for degradation of the environment. In conclusion, it would be fair to say that while the recent policies and initiatives of the government appear to be heading in a positive direction for achieving sustainable development, the biggest challenge to achieving the stated goals for a cleaner and greener environment in India remains last-mile delivery and effective implementation of policies at grass-roots level.
Chapter 8

ITALY

Gianluca Atzori

I INTRODUCTION

Italian environmental law could be considered officially born on 8 July 1986, with the law setting up the Ministry of the Environment and providing for the first regulation on environmental damage. Sector-based legislation was then adopted, until 2006, when Legislative Decree 3 April 2006, No. 152, introduced the Italian Environmental Code, governing the whole area. Most of the legislation in this field is due to legislation at the European level. However, Italian public opinion, like that in many other countries, is also increasingly sensitive to environmental matters, encouraging public institutions to act and adopt more stringent standards for the protection of the environment.

Indeed, Italian environmental law has recently been subject to significant substantive reforms. In particular:

a. the Integrated Pollution Prevention and Control (IPPC) system has been redesigned, introducing significant changes in the contents of IPPC permits, and modifying the IPPC renewal and modification process and the sanctions system;

b. a comprehensive set of environmental crimes has been introduced both in the Italian Criminal Code and in the Italian Environmental Code. These new crimes

---

1 Gianluca Atzori is an associate at Cleary Gottlieb Steen & Hamilton LLP.
2 Law 8 July 1986, No. 349; it should be noted that other pieces legislation addressing sectorial environmental issues were adopted even before 1986.
3 Legislative Decree 4 March 2014, No. 46 amended the entire Title III bis of Part II of Legislative Decree 3 April 2006, No. 152, which is the title dedicated to the IPPC system within the Italian Environmental Code.
concern conduct that in the past did not have any criminal relevance and provide for much harsher penalties than those generally provided for in the past for the existing environmental offences; and

c a special environmental law system was designed to address the complex scenario where allegations of mass pollution of the environment were made by the local prosecutor against the largest steel company in the country. However, at the same time, the plant that allegedly caused the pollution employed so many people in an economically depressed area that the Italian government adopted emergency laws to avoid the immediate shutdown of the plant, citing reasons of national interest. This special environmental law system, which as of today is applicable virtually only to this specific scenario, inter alia, provides a tool to pierce the corporate veil and attach liability to the shareholders of a company, if the company has caused significant environmental damage.

While the Italian government was required by EU law to implement the IPPC system reform, the new environmental criminal offences and the special environmental law system originated from internal public opinion. On the issue of climate change, energy policies play a crucial role. In this respect, in the 2011 referendum, the Italian people voted against the development of nuclear power plants. Moreover, in 2013, thanks to a strong incentive policy, Italy already reached its 2020 goal for the production of renewable energy, which was established by the European Union. The current Ministry of the Environment has declared its firm commitment to the Paris Agreement (COP 21), ratified by Italy in November 2016.

II LEGISLATIVE FRAMEWORK

The most important piece of legislation is the Environmental Code. The Environmental Code provides for: (1) the general principles of Italian environmental law; (2) the procedures for environmental impact assessments, strategic environmental assessments and IPPC permits; (3) norms for the protection of soil, the fight against desertification and the protection of water sources from pollution; (4) norms for waste management and clean-up procedures; (5) norms for air emissions and the protection of the atmosphere; and (6) norms for environmental damage. Other important sources of law are:

---

4 Law 22 May 2015, No. 68 amended both the Italian Criminal Code and the Italian Environmental Code, introducing a broad variety of new environmental crimes.

5 In particular, under certain conditions, the state commissioner – who, given the emergency, has replaced the administrative board of the company – is entitled to request a competent tribunal to release funds seized from the shareholders of the company in the context of investigations for alleged criminal offences even unrelated to environmental damage. The commissioner must then use the released funds to remediate the environmental damage caused by the company. See Section 11 quinquies of Article 1 of Law Decree 4 June 2013, No. 61, converted into Law by Law 3 August 2013, No. 89.

Law 4 November 2016, No. 204, which ratifies the Paris Agreement of 12 December 2015 (COP 21);

Legislative Decree 22 January 2004, No. 42, the Italian code of cultural heritage and landscape;

Legislative Decree 17 August 1999, No. 334, on the control of major-accident hazards involving dangerous substances (the Seveso Law);

Legislative Decree 8 June 2001, No. 231, which provides for the liability of legal persons for crimes committed by their managers and employees. Many environmental crimes trigger liability for legal persons under this Legislative Decree;

Presidential Decree 13 March 2013, No. 50, which introduced the single environmental authorisation, an authorisation that materially reduced the regulatory burden on small and medium-sized companies, including a single authorisation for all of the necessary environmental permits (e.g., wastewater discharges and air emissions);

Legislative Decree 13 March 2013, No. 30, establishing a scheme for greenhouse gas emissions allowance trading within the European Union, in respect of the Kyoto Protocol's mechanisms; and

Legislative Decree 19 August 2005, No. 195, granting access to the public for all environmental information possessed by a public authority.

The Treaty on the Functioning of the European Union (Articles 191, 192 and 193) grants competence in the environmental field to the European Union. However, often Member States must implement EU directives and that implies a margin of appreciation. Moreover, and most importantly, Article 193 of the Treaty provides that the protective measures adopted by the European Union 'shall not prevent any Member State from maintaining or introducing more stringent protective measures. Such measures must be compatible with the Treaties.' That means that the environment is a field where there is minimum harmonisation: the EU sets a minimum threshold that Member States must meet. However, national law may impose stricter thresholds (so-called gold plating).

III THE REGULATORS

In Italy, environmental law enforcement is managed through a multi-level governance system. The distribution of powers among the various government levels (national, regional, local, etc.) is inspired by the subsidiarity principle.

At the national level, the Ministry of the Environment and of the Territory and Sea Protection (MATTM) is the authority competent for the enforcement of environmental and climate change rules. The Ministry is both a source of regulation, through its decrees, and an enforcer, given that it has the power to grant the main environmental permits (such as IPPC permits and environmental impact assessments (EIAs) for the plants with the most significant environmental footprints) and to impose administrative sanctions for violations.

7 In 2013, the President of the Council of Ministries adopted a guideline (Directive of the President of the Council of Ministries, 16 January 2013) forbidding any form of gold plating. Nonetheless, laws are a source hierarchically higher than the guideline and therefore can derogate from this prohibition.
of such permits. The Ministry is also in charge of the clean-up procedures for contaminated lands located in the most polluted areas of the country (sites of national interest). The technical branch of the Ministry is the Superior Institution for Environmental Protection and Research (ISPRA), which is a public entity under the supervision of the Ministry that provides technical support (e.g., through the monitoring of the compliance of the operators with the permits granted by the Ministry or through the performance of environmental assessments commissioned by the Ministry).

Regions are also key players, since they are also a source of laws and regulations (within the limits set out in national law), and they also have the power to grant certain environmental permits (EIAs) (such as IPPC permits and EIAs for plants with a smaller environmental footprint than those authorised at the national level). Regions are in charge of the clean-up procedures for contaminated lands located in areas different from the sites of national interest.

Certain competences are also administered at a local level by provinces or municipalities. For instance, certain regions delegate their power to grant IPPC permits and EIAs to the provinces. Moreover, national law establishes that provinces are competent to grant certificates attesting to the successful completion of a clean-up operation. Regions can also delegate to municipalities the power to manage clean-up operations concerning contaminated lands located within the municipality's territory.

Each region has its Regional Agency for the Protection of the Environment (ARPA), which plays a similar role to the Superior Institution for Environmental Protection and Research, but at a regional level. Thus, each ARPA provides technical environmental support to the region, the provinces and the municipalities.

Every decision adopted by the MATTM, the regions, the provinces and the municipalities can be challenged before Regional Administrative Tribunals (TAR) for violation of law, lack of competence of the authority that adopted the decision or ‘abuse of power’. When the law grants a discretionary power to an authority, the court is not allowed to scrutinise the exercise of such power unless the decision is affected by serious flaws (e.g., obvious incoherence between the conclusions of the decision and the facts ascertained by the decision itself).

### IV ENFORCEMENT

Liability for the violation of environmental laws can be civil, administrative and criminal. The same fact can result in the three kinds of liability. For instance, an unauthorised release of hazardous substances into the environment can lead to civil liability for damage caused to third parties, administrative sanctions (such as the suspension or withdrawal of the environmental

---

8 Italy is currently in a transition period where provinces are gradually being abolished and their competences are being redistributed between regions, municipalities and the new entities called ‘metropolitan cities’.

9 Article 242, paragraph 13 of Legislative Decree, 3 April 2006, No. 152.
permit) and criminal liability for the crime of polluting the environment. However, many administrative sanctions apply only if the same facts are not punishable under criminal law in order to avoid the duplication of sanctions for the same fact.\(^\text{10}\)

The administrative proceeding to enforce clean-up liabilities upon a release into the environment can be triggered either by a notification sent to the authorities by the polluter or the innocent landowner (which must notify the authorities immediately upon the discovery of the release) or autonomously by the authorities. In order to attach clean-up liability to an operator, authorities must demonstrate a causal link between the operator’s activities and the pollution. Until not long ago, prospective buyers of industrial sites wanting to perform an environmental assessment in order to protect themselves from historical contamination, faced reluctance from prospective sellers. However, recent legislative reforms, amending the Environmental Code, have introduced for many industrial operators the duty to sample soils at least once every 10 years and groundwater at least once every five years.\(^\text{11}\) Thus, going forward, thanks to the data from these samplings on the status of the site throughout such time, it should be easier to correctly establish responsibility for any pollution found.

V REPORTING AND DISCLOSURE

The main environmental permits usually provide for the duty to disclose to the competent authorities (indicated by the permit itself) any non-conformity, with specific regard to the emissions limit set for wastewater discharges and air emissions. The operator may claim that the non-conformity is due to a temporary malfunction of the plant, which sometimes is considered a justified reason for the violation of the emissions limits.\(^\text{12}\)

Contamination of land, or suspected sudden or historical contamination, must immediately be disclosed to the competent authorities.\(^\text{13}\) However, the Environmental Code only gradually introduced from 2014, for industrial operators, certain duties to carry out periodical sampling of soils and groundwater. Therefore, it cannot be ignored that a number of sites may still be affected by ‘unknown’ contamination, which has not been notified to any public authority.

The law does not provide for a specific duty to disclose potential environmental liabilities to prospective purchasers. However, general law imposes upon the parties to a negotiation the duty to act in good faith. Omitting to disclose information on known environmental liabilities could be a violation of this principle, therefore triggering contractual liabilities for the seller.

Currently, the law does not afford any specific protection for whistle-blowers in the environmental field.\(^\text{14}\)

---

10 For instance, Article 20 quaterdecies, paragraph 2, of Legislative Decree 3 April, 2006, No. 152.

11 Article 29 sexies of the Italian Environmental Code.

12 IPPC permits may allow a certain number of violations of emission limits for each year, but should never exceed 20 per cent of the maximum intensity allowed (Section 7 bis of Article 29 sexies of the Italian Environmental Code).

13 Article 242 of the Italian Environmental Code.

14 For future developments on this subject, and on other pending legislation regarding disclosure duties, please see Section VIII, infra.
VI ENVIRONMENTAL PROTECTION

i Air quality
The categories of industries that may generate emissions with a material impact on the environment are subject to air emission permits.

Among these plants, the ones with the lower environmental impact must obtain an air emission permit pursuant to Article 269 of the Environmental Code. This permit lasts 15 years, and it provides emission limits and monitoring requirements. In case of a violation of the air emission permit, the competent authority may: (1) order the operator to comply with it within a certain term; (2) order the operator to comply with it within a certain term and suspend the operation of the plant if there is a threat towards public health or the environment; or (3) revoke the air emission permit in case of a violation of the orders under point (1) and (2) above or when multiple breaches of the permit endanger public health or the environment.15 Also, criminal and administrative penalties are provided, depending on the gravity of the violation of the permit.16

Plants with a higher environmental impact are likely to fall within the IPPC system and therefore need an IPPC permit, which includes a section dedicated to air emissions. Under the IPPC system, the emission limits must be coherent with the emission levels associated with the best available technique, established at the EU level.17 As already highlighted in Section II, supra, Member States are allowed to require stricter limits (gold plating), but a guideline issued by the Italian President of the Council of Ministries should prevent Italian authorities from doing so. IPPC permits can last up to 16 years.18 In the event of a violation of an IPPC permit, the competent authority has the same powers as those granted by the Environmental Code to the authorities for a violation of an air emission permit (i.e., order to comply, suspend and revoke the permit, under the same conditions laid down for air emission permits).19 Moreover, criminal and administrative penalties are provided depending on the gravity of the violation of the IPPC permit.20

ii Water quality
The mechanism for the granting of wastewater discharges permits is designed similarly to the system for the granting of air emission permits.

Plants with lower environmental impact are subject to wastewater discharge permits,21 while bigger plants fall within the IPPC system.

As to the first regime, in the event of a violation of a wastewater discharge permit, the competent authority may: (1) order the operator to comply with it within a certain term;
(2) order the operator to comply with it within a certain term and suspend the operation of the plant if there is a threat towards public health or the environment; or (3) revoke the wastewater discharge permit in case of a violation of the orders under point (1) and (2) above or when multiple breaches of the permit endanger public health or the environment.\(^\text{22}\) Also, criminal and administrative penalties are provided depending on the gravity of the violation of the permit.\(^\text{23}\)

As to the second regime, as already noted above in subsection (i) on air emissions, IPPC permits have to be aligned with the emissions level established at EU level. IPPC permits can last up to 16 years.\(^\text{24}\) In the event of a violation of an IPPC permit, the competent authority has the same powers as those granted by the Environmental Code to the authorities for a violation of a wastewater discharge permit (i.e., order to comply, suspend and revoke the permit under the same conditions laid down for wastewater discharge permits).\(^\text{25}\)

Moreover, criminal and administrative penalties are provided depending on the gravity of the violation of the IPPC permit.\(^\text{26}\)

### Chemicals

The regime for chemicals that are hazardous to health and the environment is regulated at the EU level. In order to guarantee coherence in the manufacture, placement on the market and use of chemical substances, the European Union adopted the 2006 Regulation concerning the registration, evaluation, authorisation and restriction of chemicals (the REACH Regulation),\(^\text{27}\) which is – like every EU Regulation – directly applicable in all of the EU Member States, without the need to transpose it through national implementing legislation.

Under the REACH Regulation, the manufacture, placement on the market or use of certain substances, mixtures and articles may be subject to restrictions.\(^\text{28}\) Manufacturers, importers and downstream users are forbidden to use, or place on the market for use, substances referred to in Annex XIV of the REACH Regulation unless, \textit{inter alia}, the use or placement on the market of the substances has been authorised in accordance with the regulation.\(^\text{29}\)

Pursuant to Article 68(1) of the REACH Regulation, where there exists an unacceptable risk to human health or the environment arising from the manufacture, use or placement on the market of substances that needs to be addressed on an EU-wide basis,

---

\(^{22}\) Article 130 of the Italian Environmental Code.

\(^{23}\) Articles 133 and 137 of the Italian Environmental Code.

\(^{24}\) Article 29 octies of the Italian Environmental Code.

\(^{25}\) Article 29 decies of the Italian Environmental Code.

\(^{26}\) Article 29 quattuordecies of the Italian Environmental Code.


\(^{28}\) Id., Articles 68-73 and Annex XVII.

\(^{29}\) Id., Article 56.
Annex XVII of the REACH Regulation shall be amended by adopting new restrictions or strengthening the existing ones. Any such decision shall take into account the socio-economic impact of the restriction, including the availability of alternatives. In accordance with Article 69, such process is triggered by Member States or the European Commission and involves the EU Chemicals Agency. For a new restriction to be imposed it must be shown that: (1) the manufacture, placement on the market or use of a substance on its own, or in a mixture or in an article, poses a risk to human health or the environment and (2) such risk is not adequately controlled and needs to be addressed at the EU level. The European Commission adopts the final decisions on proposals for restrictions submitted by Member States or the EU Chemicals Agency.

Authorities proposing a restriction are also requested to perform a socio-economic analysis aimed at demonstrating that the net benefits to human health and the environment of the proposed restriction outweigh the net costs to manufacturers, importers, downstream users, distributors, consumers and society as a whole. In addition, available information on alternative substances and techniques shall be provided, including information on: (1) the risks to human health and the environment related to the manufacture or use of the alternatives, (2) the availability of alternative substances, including the respective time scale, and (3) their technical and economic feasibility.

The REACH Regulation also envisages an authorisation system aimed at monitoring the risks posed by substances of very high concern, which must be progressively replaced by suitable alternative substances or technologies to the extent that they are economically and technically viable.

iv Solid and hazardous waste
Waste management is heavily regulated and violations in this field often lead to criminal penalties. The generation, transport and disposal of waste is regulated by the Italian Environmental Code.
As a general rule, Article 188 of the Environmental Code provides for the liability of the waste generator for the whole chain of treatment of the waste. Indeed, the generator must verify that the transporter and the subject in charge of the recycling or disposal of the waste possesses all of the necessary authorisations, and that the documents that need to be filed to track each step of the waste management are duly drafted and managed.

Every operator involved in waste management must provide the competent authority with adequate financial guarantees. In particular, waste transportation, recycling and disposal, as well as the management of solid urban waste, are subject to material financial guarantees.

For years the Italian government has tried to switch from an inefficient waste-tracking system based on paper documents to an electronic tracking system, featuring GPS technology and a national database of the waste produced, transported and disposed of in the country (the SISTRI system). So far, the entry into operation of the new tracking system has been postponed several times due to technical malfunctions. Currently, the paper-based system is still in place, but operators are required to register with SISTRI and provide the system with their data. From 1 January 2017 onwards, only the SISTRI system should be used, but it is not possible to rule out further postponements.

v Contaminated land

The remediation of contaminated land and groundwater is based, in Italy and in the European Union, on the ‘polluter pays’ principle. In other words, the system is designed to impose remediation duties and costs on the polluter. If the polluter cannot be identified or fails to adopt the necessary measures, and neither the owner of the site nor any other interested party adopts those measures, they are to be adopted by the competent administrative authorities at the expense of the polluter. Innocent landowners may be required to reimburse the costs relating to the measures adopted by the competent authority that has remediated the site but only within the limits of the market value of the land, determined after the implementation of those measures. The owner or any other interested person may, however, intervene on a voluntary basis at any time in order to clean up the site that they own or use. The innocent landowner that has remediated the polluted site on a voluntary basis is entitled to bring an action for damages against the polluter in respect of costs incurred and any additional damage suffered.

In certain cases, in open contrast with the Environmental Code, innocent landowners have been requested by public authorities to remediate their site when the polluter could not be identified or failed to adopt the necessary measures to remediate the pollution. Recently, a minority of the case law has sustained the legitimacy of this approach. However, the plenary assembly of the Council of State (i.e., the highest administrative court, in charge of solving case law conflicts, whose ruling is binding for lower administrative tribunals) has upheld the theory according to which the innocent landowner cannot be required to remediate pollution

35 The ‘polluter pays’ principle is mentioned by Article 191 of the Treaty on the Functioning of the European Union and Article 3 ter of the Italian Environmental Code.
36 Article 242 of the Italian Environmental Code.
37 Article 245 of the Italian Environmental Code.
38 Article 253 of the Italian Environmental Code.
39 See, ex multis, Council of State opinion of Section II, dated 23 November 2011, No. 2038/2012.
that it has not caused. The plenary assembly had also requested a preliminary ruling from the Court of Justice of the European Union on whether EU environmental principles must be interpreted as precluding national legislation:

> which, in cases where it is impossible to identify the polluter of a plot of land or to have that person adopt remedial measures, does not permit the competent authority to require the owner of the land (who is not responsible for the pollution) to adopt preventive and remedial measures, that person being required merely to reimburse the costs relating to the measures undertaken by the competent authority within the limit of the market value of the site, determined after those measures have been carried out.

The Court of Justice of the European Union ruled that EU environmental law did not preclude such national legislation. However, the consistency with EU law of the provision of the Environmental Code, as interpreted by the Plenary Assembly of the Council of State, does not exclude *per se* that the Court of Justice of the European Union might consider other interpretations of domestic law as compatible with EU law. Indeed, on the one hand, the Court stated that Italian legislation, as interpreted by the Council of State to the effect that it is not legitimate to impose the duty to carry out remedial actions on innocent landowners, is compatible with EU law. On the other hand, the Court pointed out that EU law allows Member States to adopt more stringent measures, including through the identification of additional responsible parties, provided that these measures are compatible with the Treaty on the European Union and the Treaty on the Functioning of the European Union. Therefore, it is not possible to exclude that a different interpretation of national legislation (hypothetically, the minority opinion in current Italian case law) could also be deemed compatible with the principles of EU environmental law.

VII CLIMATE CHANGE

Climate change is addressed in a number of ways in Italy. Italy firmly committed to the United Nations Framework on Climate Change (UNFCC). Italy has recently ratified the Paris Agreement by means of Law 4 November 2016, No. 204, and the Ministry of the Environment has declared that ‘for Italy, a green economy is a clear and irreversible choice. On climate change there is no way back.’

In 2006 greenhouse gas emissions trade was established, and it is now governed by Legislative Decree 13 March 2013, No. 30.

A number of incentives are in place for renewable energies and are generally granted for the whole duration of the life of the plant. Since 2017, due to European Union constraints, incentives for renewable energy plants will be awarded only through reverse auction systems, while in the past there were also forms of direct access to incentives, already pre-determined

40 Plenary Assembly of the Council of State, 25 September 2013, No. 21.
41 Plenary Assembly of the Council of State, 25 September 2013, No. 21.
42 Court of Justice of the European Union judgment 4 March 2015, C-534/13, Fipa et al.
43 L’Unità, 9 September 2016, interview with Mr Galletti, Ministry of the Environment.
by law. Also, renewable energy dispatching is prioritised in respect of other sources of energy. Thanks to these incentives, Italy is already satisfying more than 17 per cent of its energy needs through renewable energy, reaching the goal established by the European Union for 2020.

Energy efficiency is also incentivised, through the so-called white certificates, also known as energy efficiency certificates (EECs). EECs are granted by the competent public authority (GSE) upon proof of the achievement of energy saving through energy efficiency improvement projects. Electricity and natural-gas distributors are required to achieve yearly quantitative energy savings targets, expressed in tonnes of oil equivalent saved. Each certificate is worth one tonne of oil equivalent saved.

Finally, Article 29 of the Environmental Code provides that IPPC permits must include greenhouse gas emissions limits when necessary to prevent local pollution of the environment.

VIII OUTLOOK AND CONCLUSIONS

Currently, the Italian parliament is considering two legislative reforms that would have an impact on the national environmental law system.

Both reforms are required by international commitments made by Italy. The first reform is required by the need to implement Directive 2014/95/EU. The second reform is among the obligations arising from the ratification of the 2003 United Nations Convention Against Corruption, which occurred in Italy through Law 6 November 2012, No. 190.

The first reform will provide for the duty of large corporations to disclose certain environmental information in financial statements. According to the draft Legislative Decree available, from the financial year starting on 1 January 2017 or during the calendar year 2017, listed companies, insurance companies and financial institutions will have to include in their management reports a non-financial statement on corporate social responsibility matters, including their environmental policies. In particular, the companies subject to this obligation will have to disclose: (1) their energy consumption, indicating the percentage of renewable energy used and their water consumption; (2) their greenhouse gas emissions and their polluting air emissions; and (3) the impact, in the short and medium term, on the environment of the activity of the company, its products and its commercial relationships. The Italian government must adopt the final Legislative Decree by 1 January 2017.

The second reform concerns the protection of whistle-blowers in relation to the denunciation of environmental non-compliance. Indeed, while the Italian legal system already affords a certain degree of protection to whistle-blowers in certain specific fields (e.g., banking law), such protection is not currently afforded to the environmental field. The pending piece of legislation would require companies to provide for such protection in their organisational models. If this law is approved, companies will be obliged to provide whistle-blowers with protection, applicable, inter alia, to the disclosure of a number of environmental non-compliance matters.

In conclusion, the recent reforms described in Section I, infra (namely, the reform of the IPPC system, the introduction of new environmental crimes and the special environmental law system), and the pending legislation mentioned in this section, all present a common element. This common element is the tendency of the system towards real, actual and substantial protection of the environment, as opposed to the old schemes, which often focused on formal obligations that constituted unnecessary burdens on operators and were not always linked to a concrete environmental benefit. One example of this tendency is the
new sanctions system applicable to violations of an IPPC permit. Before the reform, every IPPC permit violation, even a minor one with no impact on the environment, constituted a criminal offence and was punished with modest penalties. Today, only the violations that actually impact the environment constitute criminal offences, but the sanctions are generally higher than they were in the past.

Thus, national environmental law seems to move, slowly but steadily, towards more effectively protecting the environment, removing unnecessary constraints on operators and strengthening the sanctions for conduct that actually impacts the environment.
Chapter 9

KOREA

Hyun Ah Kim and Rak Kyun Im

I  INTRODUCTION

Korea has experienced many serious environmental issues due to its dramatic economic growth since the 1960s and, particularly, the public awareness of the need for environmental regulations for public safety has been heightened following a recent incident involving deadly humidifier disinfectants and Volkswagen’s manipulation of diesel vehicle emissions. Following the former administration’s implementation of ‘low-carbon green growth’ as one of its main policies, the current government has established many new laws and regulations to strengthen environmental regulation.

Under the Framework Act on Environmental Policy (the Environmental Policy Act), the government needs to establish a comprehensive national plan for environmental protection to present long-term visions and strategies for national environmental policies (the Comprehensive Environmental Plan). Under the fourth Comprehensive Environmental Plan for the period from 2016 to 2035, the government declared ‘sustainable advancement of the country’ as its long-term vision, with implementation targets of (1) preservation and sustainable management of the natural environment, (2) protection of the public from environmental risks posed by climatic anomalies and use of harmful substances, among others, and (3) international collaboration via the establishment of a low-carbon economy and presentation of a new sustainable model.²

---

1 Hyun Ah Kim is partner and Rak Kyun Im is an associate at Shin & Kim. Other Shin & Kim associates, Jessika Kim, Han Kyul Nam, Minyoung Lee, Haelee Park and Yuri Choe assisted with the research.

2 P. 50 of the Fourth Comprehensive Environmental Plan, Ministry of the Environment, 2015.
II LEGISLATIVE FRAMEWORK

Article 35 of the Constitution of Korea prescribes the right to a healthy and pleasant environment as a basic constitutional right of citizens and provides that details about the environmental right and the exercise of the right are reserved for determination by laws.

The Environmental Policy Act sets forth the general framework of individual environmental laws. Specifically, the Environmental Policy Act provides the purpose and basic principles for national environmental policies, including the ‘polluter pays’ principle, precautionary principle, and strict liability for environmental damages. Furthermore, it prescribes basic obligations of the government for environmental protection such as establishment and maintenance of environmental standards and development of the Comprehensive Environmental Plan.

Also, there are more than 50 laws and regulations by the type of pollution, and important new laws and regulations are being enacted every year, including the 2014 Act on Liability for Environmental Damage and Relief Thereof, the 2015 Framework Act on Resource Circulation, and the 2015 Act on Comprehensive Management of Environmental Pollution Facilities.

III THE REGULATORS

The Ministry of Environment (MOE) is mainly in charge of enforcing individual environmental laws, but many laws and regulations vest the authority to issue permits or impose sanctions in the local governments. In case of some laws, different ministries such as the Ministry of Land, Transport and Maritime Affairs, the Ministry of Trade, Industry and Energy and the Ministry for Food, Agriculture, Forestry and Fisheries have jurisdiction, causing criticism that such division undermines effective enforcement of the laws.

IV ENFORCEMENT

For violations of individual environmental laws, possible administrative sanctions include cancellation of the permit and an order to pay a fine or recall the relevant product. In addition, environmental crime is regulated by the individual environmental laws as well as the Act on the Control and Aggravated Punishment of Environmental Offences (the Environmental Offences Act). While the individual environmental laws may impose sanctions for simply having a certain level of environmental pollution, the Environmental Offences Act imposes a sanction only when there is damage to the life or body of a person. Individual environmental laws and the Environmental Offences Act have a joint penal provision, specifying that both the actor and the company shall be jointly punished in case of a violation.

However, Korea’s individual environmental laws do not have a systematical device for the relief of damages from environmental pollution. Thus, pursuant to Article 750 of the Civil Code, courts have recognised the liability of a polluter to compensate for the victim’s damages. In addition, Article 44 of the Environmental Policy Act provides for strict liability for damages from environmental pollution. Also, the victim of environmental pollution may claim damages against the government, and may file an administrative suit in order to cancel the government decision that caused the environmental pollution.
V ENVIRONMENTAL PROTECTION

i Air quality

The Clean Air Conservation Act (CACA) is the framework act on air quality in Korea. The CACA provides that a business operator installing facilities, etc. that emit air pollutants shall obtain authorisation for such facilities from or report such facilities to the Mayors or Province Governors and install air pollution preventive facilities. Air pollutants emitted from air pollutant-emitting facilities shall not exceed the permissible emission levels. As the CACA determines such levels based on density, there is criticism that the regulation should be based on the total quantity. Furthermore, a business operator emitting dust or sulphur oxides shall pay emission charges even when the permissible emission levels are not exceeded and pay extra emission charges when such levels are exceeded.

Cement-related or metal manufacturing business operators that generate fugitive dust shall report such fact to the competent authorities and take measures to reduce the generation of fugitive dust even when air pollutants are not generated.

The CACA also regulates exhaust gases from motor vehicles. A person who manufactures or imports motor vehicles is required to obtain in advance certification of the relevant permissible emission levels determined by the MOE and may be subject to surcharge when such levels are exceeded. The permissible emission levels for motor vehicles include those related to greenhouse gases as well as those for air pollutants.

Because of the special characteristics of the metropolitan area, businesses in the metropolitan area are governed by the Special Act on the Improvement of Air Quality in Seoul Metropolitan Area (IAQSMA). While the permissible emission levels under the CACA constitute merely a follow-up management system based on density, the IAQSMA provides for the regulation of total quantity.

There are other air quality-related laws, including the Act on the Control, etc. of Manufacture of Specific Substances for the Protection of the Ozone Layer and the Indoor Air Quality Control in Public Use Facilities, etc. Act. The former was established to enforce the Montreal Protocol on Substances that Deplete the Ozone Layer, and the latter regulates the management of indoor air quality in public use facilities or newly constructed houses.

Korea’s air pollution levels are among the highest in OECD countries, and its fine-dust density is almost double the OECD average. In response, the MOE will designate areas that emit many air pollutants as special management zones and impose permissible emission levels on such zones that are more stringent. The government plans to take various measures to control fine dust, including encouraging disuse of old motor vehicles via reduction of diesel motor vehicles, and to increase cooperation with neighbouring countries, including China and Japan, to reduce fine dust from 2017.

---

3 The MOE categorises granular matters, bromine, aluminum, steel, etc. as air pollutants.
5 Dust directly emitted to the air not through any prescribed vent.
7 Id. at 70.
The Water Quality and Aquatic Ecosystem Conservation Act (WQAECA) is the framework act on water quality in Korea. The WQAECA provides that a business operator intending to install a wastewater discharge facility as a point pollution source shall obtain authorisation from, or report to, the MOE. If a wastewater discharge facility may cause grave harm to residents or animals and plants in adjacent areas, the MOE may restrict the installation of such facility after consulting with the heads of competent administrative agencies. A person who installed a wastewater discharge facility shall install a water pollution prevention facility.

A company operating a wastewater discharge facility shall ensure the permissible discharge limits are not exceeded, and if such limits are exceeded, the MOE may issue an improvement order, order the suspension of operation, or cancel the authorisation of such company. Permissible discharge limits in Korea are based on density and vary only depending on the locations of business places, not the nature of the business.

A company intending to install a wastewater discharge facility as a non-point pollution source shall report the installation of a non-point pollution source, install a facility reducing non-point source pollution, and adequately manage a non-point pollution facility. The company may be subject to fines if it breaches any such obligations above. Non-point pollution sources include construction and manufacturing of wood, chemical and plastic products.

The WQAECA also provides that the MOE shall constantly measure water pollution levels of public waters and waterways, including rivers and harbours. Also, the Act prohibits substances harmful to water quality being discharged into such public waters without justification and provides that any company violating such provision shall be subject to criminal punishment.

There are other various laws related to water quality including the Sewerage Act and the Act on the Management and Use of Livestock Excreta, the River Act, the Groundwater Act, the Water Supply and Waterworks Installation Act, and the Drinking Water Management Act. Therefore, applicable laws may vary depending on the relevant industrial sector and the location of the business. Such multiple water-management systems make water-management policies less efficient to a certain extent. As such, the MOE announced that it will establish the Framework Act on Water Management integrating water quality-related laws into one law and revise the current permissible discharge limit system under the WQAECA that fails to reflect the nature of industrial wastewater of each business category. The MOE will then apply procedures differentiated by business category until 2025.
Chemicals

The Act on Registration, Evaluation, Etc. of Chemicals (K-REACH) and the Chemicals Control Act (CCA) are the primary laws regulating chemicals. Matters previously governed by the Toxic Chemicals Control Act are subject to K-REACH and the CCA, which were established in 2013 and enforced in 2015. K-REACH regulates the manufacturing, import, and distribution of chemicals, while the CCA regulates the management of chemicals and prevention of accidents.

The purpose of K-REACH is to review and assess the hazards and risks of chemicals and products containing them in advance and to designate and manage hazardous chemicals. It was established under the influence of the EU REACH’s ‘no data, no market’ principle. While only new chemicals were subject to registration as hazardous chemicals in the past, K-REACH provides that existing chemicals are also subject to such registration.

K-REACH provides that any person intending to manufacture or import a new chemical or at least one ton of an existing chemical per year shall apply for registration thereof in advance by submitting specified information and test data and report the usage, quantity, etc. of such substance to the MOE each year. The MOE is required to designate and announce existing chemicals subject to registration every three years and grant a registration grace period of three years. Under K-REACH, registration procedures for new chemicals manufactured or imported in a small quantity of less than one ton per year are simplified, and chemicals meeting specified requirements, including chemicals for R&D purposes, low-concern high-polymer compounds, and non-isolated intermediates, are exempted from registration. Joint registration of certain data by a consortium of importers or manufacturers of the same chemical is required. The MOE may order manufacturers or importers of chemicals without the required registration thereof to take necessary measures, including the suspension of manufacturing, importation, sale or withdrawal of such substance, and such person may be subject to criminal punishment.

Information on registered chemicals shall be shared within the entire supply chain, including with downstream users. Manufacturers or importers of chemicals shall provide information on such substances for downstream users or sellers, who shall, in turn, provide such manufacturer or importer with information required for the registration of such substances, including their usage. However, information constituting a trade secret under the Unfair Competition Prevention and Trade Secret Protection Act may not be disclosed.

The MOE is required to conduct hazard assessment of registered chemicals. If the results thereof show that a risk review is required or if the manufactured or imported quantity is 10 tons or more per year, the MOE shall also conduct the risk assessment. The MOE shall designate a chemical found hazardous based on the hazard assessment as a toxic substance, a chemical found likely to pose a risk based on the results of the hazard and risk assessment as a substance requiring permission, and a chemical deemed to pose a risk as a prohibited or restricted substance. While the manufacturing, importation, sale, keeping, and use of hazardous substances are prohibited, the use of chemicals is regulated by the safety and health requirements of the importers or manufacturers.
storage, transportation or use of the prohibited substance is prohibited for all purposes, the restricted substance is deemed to pose a risk if used for a specified purpose, and the manufacturing, importation, sale, keeping, storage, transportation or use thereof is prohibited for such purpose.

If a person manufactures or imports a product containing hazardous chemicals with the total quantity of each substance exceeding 1 ton per year, such person is required to report such manufacturing or importation to the MOE. In an effort to prevent another incident similar to the deaths and injuries caused by humidifier disinfectants, risk assessment of products shall be conducted to prevent risks that may be posed by hazardous chemicals contained in such products to human health or the environment, and safety or labelling standards for products of risk concern shall be determined depending on the results of such assessment. Products not meeting such safety standards shall not be sold or donated, and the MOE may order necessary measures, including the suspension of sale, or withdrawal or destruction, of such substance, and any person in violation of the provision above may be subject to criminal punishment.

The purpose of the CCA is to protect public health and the environment through systematic management of chemicals and prevention of chemical accidents. The CCA provides for criteria for handling hazardous chemicals, and all persons handling hazardous chemicals shall meet such criteria. If a person handling hazardous chemicals intends to display or store hazardous chemicals in excess of a specified quantity, the person needs to prepare a plan for display or storage and obtain advanced confirmation from the MOE.

Where the MOE decides that a hazardous chemical poses or is likely to pose serious risks to human health or the environment, the MOE may order suspension of the manufacturing, importation, sale, keeping, storage, transportation, or use of such chemical. The CCA also provides for the installation and operation of hazardous chemical handling facilities. A person intending to install and/or operate a hazardous chemical handling facility shall prepare an external impact evaluation14 and submit it to the MOE, which shall review such evaluation and notify such person of the degree of hazard to such facility and whether it is adequate.

To prepare for and respond to chemical accidents, the CCA provides that substances requiring preparation for accidents shall be designated and that a standard for control of substances requiring preparation for accidents shall be established and observed. Anyone handling substances requiring preparation for accidents in excess of a specified quantity shall prepare a hazard control programme every five years and submit it to the MOE so that necessary emergency measures can be immediately taken under such programme upon the occurrence of a chemical accident. In particular, the MOE shall conduct an impact investigation to identify the cause of the chemical accident, minimise and recover the damage, and order a business operator who caused the accident to take specified measures.

iv Solid and hazardous waste

The Waste Control Act (WCA) is the framework act on waste in Korea. If a material is considered to be ‘waste’ under the WCA, it is subject to various waste-related laws, including the WCA. The WCA defines waste only as ‘materials such as garbage, burnt refuse, sludge, 14 It means an evaluation of impacts of an accident involving hazardous chemicals on people or the environment, etc. adjacent to the business place.
waste oil/acid/alkali and animal carcasses that are no longer useful for human life or business activities’. The failure to clarify to whom such materials are no longer useful and in what sense has led to various disputes over the interpretation of the definition. The MOE has presented relevant criteria that a product or material constitutes waste if it no longer has value to its producer, and that even if such material is useful to a third party and sold without charge or at a low price, it constitutes waste if it is required to be adequately controlled under the WCA.15

Under the WCA, different regulations on the method of treatment apply to different types of waste. Specifically, waste generated from business places is categorised as ‘commercial waste’ and the other waste is categorised as ‘household waste’. Commercial waste is further categorised as ‘general commercial waste’, ‘construction waste’ and ‘controlled waste’, which is commercial waste such as waste oil or acid that may contaminate its surroundings or medical refuse that may harm human bodies. General commercial waste is further categorised as ‘discharging facility waste’ generated from discharging facilities and ‘commercial household waste’ generated from sources other than discharging facilities. ‘Medical refuse’, among controlled waste, is regulated separately.

Household waste shall be discharged and treated under ordinances of competent local municipalities. However, a person discharging commercial waste shall treat it independently or commission the treatment thereof to a person licensed to run a waste treatment business. If such a person chooses to commission the treatment thereof, he or she shall conclude a contract with the commissioned person after confirming his or her treatment capacity through a copy of his or her waste treatment business licence and report such discharge to competent local municipalities. A person discharging general commercial waste or controlled waste shall perform obligations of inputting electronic data on waste delivery and receipt, recording or preserving waste treatment documents, preparing and submitting reports on generation or treatment of waste and providing those in charge of waste treatment with a statutory education. A person discharging controlled waste among commercial waste is subject to additional regulations.

General commercial waste shall be stored in containers or warehouses made of corrosion-resistant or indestructible materials, separately from discharging facility waste, controlled waste, construction waste and household waste. Controlled waste shall be stored separately from other waste, and depending on the specific types thereof, measures under the WCA shall be taken for such waste, including double packaging, sealing and indication of marks.

The 'waste disposal business,' which specialises in the collection and transportation of waste of other persons, is classified into the collection and transportation business, the interim disposal business, the final disposal business, and the comprehensive disposal business. The WCA sets forth different approval and licence standards for the facilities, equipment and technical capabilities required for different waste disposal businesses. In case of any changes in the approved matters pursuant to the WCA, a waste disposal business operator shall obtain an approval of changes or submit a report of changes. A waste disposal business operator conducting a waste disposal business without the required approval under the WCA may be subject only not to administrative dispositions, but also to criminal punishment. Also, a waste disposal business operator shall obtain approval set forth in the WCA in installing,
commencing, terminating the use of, and closing waste disposal facilities. A waste disposal business operator shall also periodically conduct inspections and submit reports during the operation of waste disposal facilities and perform ex post facto management in respect of landfills.

Meanwhile, the Act on the Promotion of Saving and Recycling of Resources (APSRR) is enforced in Korea to curb occurrence of waste and to promote recycling of resources. Under the APSRR, waste charges are imposed on manufacturers or importers set forth therein, and recycling charges may be imposed in case of a violation of the APSRR by manufacturers, importers, or sellers of products, who are obliged to recycle.

In addition, Korea has the Act on the Transboundary Movement of Hazardous Waste and its Disposal, under which an approval by the MOE is required for any export and import of waste. Also, the recycling of construction waste, electric and electronic products, and automobiles is separately regulated by the Construction Waste Recycling Promotion Act and the Act on Resource Circulation of Electrical and Electronic Equipment and Vehicles.

v Contaminated land

A Korean law regulating the contamination of land and remediation is the Soil Environment Conservation Act (the Soil Act), which designates 21 substances as soil contaminants. Depending on the concentrations of the substances in the soil, the Soil Act sets forth ‘Worrisome Level of Soil Contamination’ and ‘Standards of Countermeasures against Soil Contamination’. Where there is soil contamination in excess of these standards, the MOE or the local government concerned must investigate the soil in question and establish measures for purification thereof. Also, facilities, equipment and buildings that are likely to contaminate soil due to production, transportation, storage, handling, processing, or treatment of soil contaminants are classified as facilities subject to control of soil contamination. Of these, facilities posing substantial risks of soil contamination are classified as specified facilities subject to the control of soil contamination, which must be reported and are managed at the government level.

The Soil Act recognises strict liability for damages resulting from soil contamination for any person who has caused the contamination. Under the Soil Act, the following people shall be responsible for purification:

- any person who causes soil contamination;
- the proprietor, occupant, or operator of a facility subject to the control of soil contamination constituting a cause for soil contamination as at the time soil contamination occurs; and
- any successor to the comprehensive rights and obligations of those corresponding to the foregoing item (a) or (b); and
- any person who previously owned or presently owns or occupies land on which soil contamination has occurred.

However, responsibility for purification do not apply in the following cases:

- where the person no longer owned the relevant land due to transfer or other reasons before the enactment of the Soil Act;
- where the person acquired the relevant land before the enactment of the Soil Act;
- where the person was in good faith and was not negligent in preventing soil contamination at the time he or she acquired the land on which soil contamination has occurred; and
Where soil contamination occurs while the person owns or occupies the relevant land and such soil contamination occurs due to reasons unattributable to him or her.

If multiple persons are responsible for purification, the responsibility for purification shall be borne in the following order of priority:

- **a** a person who directly caused the soil contamination and a person who comprehensively succeeded to the rights and obligations thereof (the successor);
- **b** an occupant or an operator of facilities subject to the control of soil contamination and the successor;
- **c** a possessor of facilities subject to the control of soil contamination and the successor;
- **d** a person who currently possesses or occupies land where the soil contamination took place; and
- **e** a person who has possessed land where the soil contamination took place.

However, an order for soil purification may be issued to any one of the persons responsible for purification with lower priority, ahead of a person with higher priority, in cases where the person with higher priority is unidentifiable or where the purification costs are excessive. The person who has been ordered to conduct soil purification and performed soil purification may claim reimbursement for the share of expenses to be borne by the other persons responsible for purification.

The government may subsidise all or part of the expenses incurred in conducting soil purification if certain requirements are satisfied, including (1) where the expenses required by a person responsible for soil purification to perform soil purification significantly exceed his or her share of expenses or (2) where the purification expenses significantly exceed the value of the relevant land.

The above clauses resulted from an amendment to the Soil Act on 24 March 2014. The purpose and object of the clauses as amended, and circumstances that led to the amendment are as follows.

Prior to the above amendment, with respect to soil contamination that occurred, the Soil Act imposed primary responsibility for purification thereof without fault on not only the direct contamination-causing person, but also on the owner, occupant, operator, and transferee of the soil contamination-causing facilities. The above clauses as amended reflect a decision rendered by the Constitutional Court, which declared that the clauses prior to the amendment violate property rights and rights to equality and therefore are unconstitutional (Constitutional Court Decision in Case No. 2010 Heonba167, dated 23 August 2012).

According to the Soil Act, with respect to a transfer or lease of a piece of land on which a factory or other facilities subject to control of soil contamination existed or a piece of land likely to have soil contamination, such land and certain surrounding areas may be subject to an evaluation to be conducted for possible soil contamination by a soil environment evaluation institution (soil environment evaluation).

If contaminated land has been transferred several times, an issue may arise in terms of responsibility for purification thereof and liability for damage under private law. Recently, the Supreme Court ruled that the transferor of a site on which it operated an iron foundry for 20 years should be liable for tort damage with respect to the soil contamination purification.

---

16 Reasons for Amendment [Partial Amendment as Law No. 12522 as of 24 March 2014].
expenses incurred by the current owner of the site, rather than the person to whom such transferor initially transferred the site (en banc judgment of the Supreme Court in Case No. 2008 Da66549, dated 19 May 2016). Prior to the Supreme Court judgment above, the case law was that an act of contamination by a person on a piece of land owned by it did not constitute a tortious act. In the case above, however, the Supreme Court reversed the judicial precedents and ruled that a tortious act occurs if a person who contaminated a piece of land owned by it offers such land for a transaction. With respect to the statute of limitations, the Supreme Court ruled that the 10-year statute of limitations period shall commence when damage actually arose as things reached a situation where soil contamination purification expenses were paid or had to be paid. Through this ruling, the Supreme Court recognised a virtually unlimited retroactive tort liability against the person who directly caused the soil contamination.

VI CLIMATE CHANGE

The framework law on climate change including the regulations on the emission of greenhouse gases in Korea is the Framework Act on Low Carbon, Green Growth (the Green Growth Act).

According to the Green Growth Act, the Green Growth Committee has been established under the governance of the Prime Minister, and it is charged with examination of low-carbon or green-growth policies and basic planning to address climate change.

Under the Green Growth Act, the Korean government should establish and execute the basic plans for addressing climate change and basic energy plans every five years with a total planning period of 20 years in addition to setting forth medium and long-term and phase-by-phase goals for the mitigation of greenhouse gases and devising measures as may be necessary for the achievement of those goals. Following such basic plans, Korea initially aimed to reduce greenhouse gas emissions by 30 per cent compared to the business-as-usual scenario by 2020. The goal has been updated this year to reducing total nationwide greenhouse gas emissions by 37 per cent compared to the business-as-usual scenario by 2030.

The Act on the Allocation and Trading of Greenhouse-Gas Emission Allowances (the Emissions Trading Act) has been enacted under the Green Growth Act, and the allowance trading system is currently in operation accordingly.

However, the allowance trading system is yet to be fully fledged in Korea. Considering the potential effects of the system over the industries, the entire planning period is divided into several phases, where the first phase is from 1 January 2015 to 31 December 2017, and the second phase is from 1 January 2018 to 31 December 2020. During the first phase, all permits shall be allocated based on the grandfathering method free of charge; during the second phase, 97 per cent of the permits shall be allocated free of charge; and from the third phase and thereafter, the free allocation portion shall be determined by the ‘National Emission Allowance Allocation Plan’ provided that it does not exceed 90 per cent of all allowances.

The government is required to establish the ‘National Emission Allowance Allocation Plan’, which will provide for, for each phase of the planning period, (1) total emissions permitted; (2) total quantity of allowances; (3) target recipients (sectors and industries) of allocations; and (4) criteria for allocation and allocation quantity by sector, industry and performance year, among others.

The competent authority for the emission trading system, at its inception, was the MOE. However, as of 1 June 2016, multiple ministries have become involved: the...
overall management of the allowance trading system including the allocation plan and the allowance exchange is the responsibility of the Ministry of Strategy and Finance while the implementation of the emission trading system including actual allocation and adjustment or cancellation of allocation are to be handled by the respective relevant authorities (Ministries of Agriculture, Food and Rural Affairs; Trade, Industry and Energy; Environment; Land, Infrastructure and Transport; and Maritime Affairs and Fisheries).

The competent authority allocates the total quantity of allowances for the relevant phase of the planning period and the allowances for each performance year to target recipient companies according to the ‘National Emission Allowance Allocation Plan’. Additional allocation or adjustment and cancellation of allowances for each performance year are possible. For specific details regarding the allocation, adjustment and cancellation of allowances, the government has introduced and implemented the ‘Guidelines on Allocation, Adjustment and Cancellation of Greenhouse Gas Emission Allowances’.

Allocated allowances may be traded by way of purchase and sale or otherwise. Target recipient companies should submit allowances in an amount corresponding to the actually authorised emission quantities no later than six months from the end of each performance year. The allowances may be carried over into the next year or borrowed, subject to approval by the competent authority. Offsetting of trading allowances is also allowed as long as it conforms to the relevant international standards.

If a company emitted greenhouse gases in excess of the allowances allocated, the competent authority may impose, for such excess, a surcharge not more than three times the average market price of allowances for the relevant performance year within the extent not exceeding 100,000 won per ton of CO₂.

Upon the first allocation of allowances, a number of target recipient companies in the petrochemical and non-ferrous metal industries, among others, filed a lawsuit against the MOE seeking the cancellation of the National Emission Allowance Allocation Plan or of the allocation of allowances to the target recipient companies. This lawsuit is still pending.

VII OUTLOOK AND CONCLUSIONS

As environmental pollution has recently caused considerable damage, the importance of compensation for environmental damage has grown in addition to the government’s environmental regulations. The Act on Liability for Environmental Damage and Relief Thereof, established at the end of 2014 and enforced from 1 January 2016, recognises strict liability for environmental damage and requires owners, installers and operators of certain facilities causing environmental damage to take out environmental liability insurance. Such insurance is expected to serve as an important means of relief for environmental damage. The Act is criticised for its unclear provisions, liability cap on compensation of 200 billion won, and the maximum amount of indemnity payment under environmental liability insurance of 30 billion won per facility, that these provisions actually provide protection for business owners. However, as victims may make direct claims for insurance benefits to insurers thereunder, the Act is expected to contribute to ensuring prompt relief for victims.
Chapter 10

MEXICO

Ricardo Eloy Evangelista Garcia and Mariana Arrieta Maza¹

I INTRODUCTION

In Mexico, the environmental statutes are administered, as set forth in the Mexican Constitution, in partnership between the federation, states, and the municipalities. Consequently, there is a vast amount of legislation ruling environmental matters due to the federation, states and municipalities having powers to redact and enact their own environmental laws, regulations and standards. In this regard, the Mexican environmental legal framework is complex and extensive.

In addition, in the last five years the Mexican environmental legal framework has undergone important modifications worth mentioning.

In 2011, and due to the human rights reform, the Federal Code of Civil Procedure was modified to contemplate the collective actions, same that can be promoted for the defence of affected interests and rights of a collectivity in matters of consumer relations of goods or services, public or private and in regard to the environment.

The Federal Law for Environmental Liability was published (on 7 June 2013) and entered into force on 7 July 2013. This law foresees the action to claim environmental liability for causing an environmental damage.

During mid-2013, there was a major reform in the energy sector. One of the most important contributions in said reform was the creation of a new government entity specifically created to regulate and verify compliance of all environmental and safety matters and regulations within the hydrocarbon sector, the National Agency for Safety, Energy and Environment (ASEA).

The General Law on National Water is being discussed in Congress. In the event that said law is approved, it will substitute the National Water Law.

¹ Ricardo Eloy Evangelista Garcia is a senior associate and Mariana Arrieta Maza is a junior associate at Basham, Ringe & Correa, SC.
II LEGISLATIVE FRAMEWORK

The main environmental statutes and regulations currently in force that set forth the basis for federal, state and municipal enforcement are the following:

- the Mexican Constitution;
- the General Law for Ecological Balance and Environmental Protection (LGEEPA), and its regulations;
- the General Law for the Prevention and Comprehensive Management of Wastes (LGPGIR) and its regulations;
- the Federal Environmental Liability Law;
- the National Water Law and its regulations;
- the General Law for the Sustainable Forestry Development, and its regulation;
- the Wildlife Law, and its regulation;
- the Law of the National Agency for Industrial Security and Environmental Protection for the Hydrocarbons Sector;
- the Biosecurity of Genetically Modified Organisms Law and its regulations; and
- the Mexican Official Standards (NOM) and Mexican Standards (the former are mandatory and the latter voluntary, unless there is no NOM published on the subject).

In addition, at a local level, states and municipalities have their own legal framework, always in accordance with the federal legal framework.

III THE REGULATORS

Concerning regulatory authorities, a similar situation presents itself as the federation, the states and the municipalities may enforce their regulations through their own environmental authorities. However, at the federal level, the most important environmental authority is the Environmental and Natural Resources Ministry (SEMARNAT) together with the agencies that have specific powers on environmental matters, such as:

- the Federal Environmental Protection Agency (PROFEPA) – verification, vigilance and enforcement of the law;
- the National Agency for the Industrial Security and Environmental Protection for the Hydrocarbons Sector (ASEA) – verification, vigilance and enforcement of the Law within the hydrocarbon sector;
- the National Water Commission (CONAGUA) – verification, vigilance and enforcement of the law concerning water consumption, wastewater discharge and occupancy of federal property; and
- there are administrative offices that aid SEMARNAT in the enforcement of the law, such as the National Forestry Commission and the National Institute of Ecology and Climate Change.

IV ENFORCEMENT

The enforcement of environmental matters is a federal, state and municipal joint task. At the federal level, SEMARNAT is in charge of ensuring environmental compliance and sustainable development.
In order to exercise its authority, it is supported by the following agencies:

\( a \) PROFEPA: its main function is to ensure compliance with environmental laws and contribute to sustainable development by conducting environmental audits, inspections and imposing sanctions.

\( b \) ASEA: it regulates, supervises and even imposes sanctions regarding environmental protection related to hydrocarbon activities, including air emissions, wastes and environmental impact aspects.

\( c \) CONAGUA: its main purpose is to administer and preserve national waters to achieve the sustainable use of this resource. It grants permissions and concessions for the use of water resources and has the power to inspect in order to monitor compliance with regulations related to water and water pollution.

At local level both states and municipalities have environmental ministries or offices aided in many cases by environmental protection agencies (following PROFEPA’s structure).

The enforcement of environmental regulations is mainly executed through the following methods.

\( i \) Permits and licences

There are a number of mandatory permits and licences to be obtained by private parties depending on the characteristics of the project or activity to be executed by said party, which are granted by the regulating authorities whenever the projects comply with certain conditions and requirements (legal requirements). The detection of irregularities in the requirements necessary for granting permits and licences is the first assessment of environmental legal compliance.

\( ii \) Terms and conditions

Regulating agencies when granting permits and licences impose certain terms and conditions, aimed at observing the principles of environmental protection and reduction of pollution, which holders of said permits and licences must observe during the time they operate their project or carry out their activities.

\( iii \) Inspections

The regulating agencies are empowered to order inspections in order to determine if environmental regulations are being observed and complied with. If not, authorities may require the inspected party to immediately adopt corrective or urgent measures needed in order to comply with applicable laws and regulations, or begin administrative proceedings for the imposition of sanctions; or even inform the Public Prosecutor about any violations observed during the inspection which may constitute a criminal offence.

\( iv \) Sanctions and remedies

As a result of administrative proceedings, the authorities may impose sanctions, such as:

\( a \) fines up to 50,000 days of minimum wage (approximately US$188,245);

\( b \) closures (temporary or definitive);

\( c \) administrative arrest for up to 36 hours;

\( d \) seizure, suspension or annulment of permits and authorisations; and
confiscation of instruments, specimens, products or by-products directly related to infctions relative to forest resources, species of flora and fauna or genetic resources.

v Judicial proceedings

Environmental proceedings can be civil, criminal or administrative in nature. The majority of proceedings are administrative in nature. Therefore, the Administrative Court has created ‘Special Halls on Environmental and Regulatory Matters’ in order to give a technical and specific attention to environmental cases. Judicial proceedings can be accessed both by private parties against regulators for infringement of their rights or by regulators themselves (i.e., environmental damage and environmental liability actions).

vi Collective actions

Due to the reform in 2011 of the Federal Code of Civil Procedure, civil actions were incorporated into the Mexican legal framework (the Fifth Book of the Code). These actions proceed in two matters:

a consumer protection matters – ‘consumption of assets and services, public or private’; and

b environmental matters – ‘the environment’.

In this regard collective actions can be brought to: (1) protect diffuse and collective rights and interests (i.e., those that are held by undetermined individuals that belong to a group due to factual or legal reasons); and (2) protect individual rights and interests with a collective incidence (i.e., those that are held by determined individuals that belong to a group due to legal reasons).

vii Environmental liability actions:

On the other hand, due to the creation and publication of the Federal Environmental Liability Law in June 2013, both private and public parties were granted with the right to enforce environmental liability actions against parties causing environmental damage so that the latter can be repaired or compensated and the responsible party judged for causing it.

Both actions (collective and environmental liability actions) empower NGOs to enforce them on behalf of either the affected communities or on behalf of the individuals belonging to an affected community, this is, on behalf of those whose rights were violated as long as certain conditions are met (i.e., they were legally incorporated one year prior to exercising the action).

viii Public consultations

This is a preventive incidence method granting NGOs and particular parties the right to be involved in the administrative process of approving the development and operation of certain project or activity. Environmental legislation foresees stages when proceedings are opened to the public so that they can submit their opinion on the matter (i.e., environmental impact assessments or social impact assessments).

In addition, it cannot go unrecognised that NGOs have always played a strong influencing role when setting environmental policy and legislation as they, either formally or
informally (nowadays social media participation and pressure is forceful), collaborate for our legislative powers (both federal and local) to prepare and push for initiatives to be approved and enforced.

V REPORTING AND DISCLOSURE

Holders of environmental permits or authorisations are required to file reports before either federal or local environmental authorities on a regular basis with the purpose of proving the fulfilment of the conditions set forth in such permits and authorisations. At federal level this report is filed through federal annual operating reports and at local level similar reports have been implemented.

Technical evidence supporting the information included in the report must also be filed before the authority for its review (i.e., wastewater or atmospheric emission tests that are carried out to determine if these emissions are within the maximum permissible levels of pollutants set out in the applicable Mexican Official Standards). When the technical evidence shows that the maximum permissible levels of pollutants have been exceeded, then they can be used by the authorities as a basis to initiate an administrative law procedure against the holder and impose a penalty for the violation.

Pursuant to the regulation ruling the transfer of polluted land, the party who transfers the ownership of a polluted land is required to disclose to the prospective purchaser the information concerning the environmental conditions of the land to be transferred. The statement of the landlord on the environmental conditions of the land must be incorporated in the agreement by means of which the ownership is transferred. Prior to transferring the ownership of polluted land, both parties are compelled to obtain a polluted site transfer authorisation from SEMARNAT.

Likewise, the generator of or person responsible for handling hazardous wastes or materials are obliged to notify PROFEPA on the releases, infiltrations, discharges or leaks of any of these materials or wastes that occurred by fortuitous events or force majeure, unless the affected surface is under one cubic metre. This notice must be given immediately after the event occurred and filed in writing no later than three business days from the day on which the event took place.

VI ENVIRONMENTAL PROTECTION

The Mexican Environmental Legal Framework is comprised by a set of both federal and local dispositions ruling the permitting regime. Being that natural resources and environmental protection is a subject of concurrent jurisdiction, as set forth in Article 73 of the Mexican Political Constitution, the federation, states and municipalities are empowered to rule and issue legal dispositions on different topics of said subject. The General Law for Ecological Balance and Environmental Protection (LGEEPA) sets forth the topics and boundaries of the scope of action that the federation, states and municipalities have.

In this regard, the main topics for which specific permits are required are the following:

- environmental impact;
- environmental risk;
- air emissions;
- hazardous waste;
- special handling and solid waste;
f) water; and
g) wastewater discharge.

**Integrated permitting regime**
There is an integrated permitting regime at federal level for sources under federal jurisdiction which covers air emissions, national water consumption and wastewater discharge into bodies of water under federal jurisdiction, as well as generation of hazardous wastes. This integrated permitting regime is covered by the sole environmental licence, which is granted by SEMARNAT on a permanent basis unless there is a modification to increase production, extend the facilities or change the corporate name.

Nonetheless, the activities executed by sources under federal jurisdiction must present activity reports on an annual basis. These reports are known as annual operating reports (COAs).

**Separate permitting regime**
In the event that an activity does not cover all the topics referred to above, separate permits must be obtained to comply with the legislation:

a) an environmental impact and risk authorisation;
b) an accident prevention plan approval (for high-risk activities as set forth in the first and second lists of high-risk activities);
c) register as a hazardous waste generator;
d) a hazardous waste-handling plan;
e) a concession title to extract national waters; and
f) a federal permit to discharge wastewater.

In addition, and as previously mentioned, states and municipalities have their own permitting regimes covering the subjects under their jurisdiction (i.e., local environmental impact and risk, special handling and solid wastes, wastewater discharge into municipal drainage systems).

Some states and municipalities do have integrated permitting regimes (i.e., Mexico City through the local sole environmental licence or the state of Mexico in several municipalities through the municipal environmental licence) while others grant separate permits for each subject.

**i) Air quality**
The Mexican environmental legal framework protects air quality from both fixed and mobile air emission sources. As set forth in Sections II and VI, *supra*, both the federation and the states have power to regulate on the matter. The federation regulates the following activities and industrial sectors: hydrocarbons, chemical, painting and ink, metal, automotive, cellulosic and paper, asbestos, glass, electric energy generation, and hazardous waste treatment.

States are empowered to rule on fixed sources that are not part of the aforementioned sectors under federal jurisdiction as well as mobile sources located within their territories.

Fixed sources are compelled to secure the permits as follows.

Federal fixed sources must secure the federal sole environmental licence (LAU), which, as identified above (see Section VI), is granted by SEMARNAT on a permanent basis unless there is a modification to increase in production, facilities’ extension or change in corporate name and is actually a comprehensive permit covering, in addition to air emissions control, subjects such as environmental impact and risk, hazardous waste generation, and national water extraction.
In addition, activities executed by sources under federal jurisdiction must present activity reports on annual basis. These reports are known as COAs.

Local fixed sources must secure local environmental licences that are commonly under a separate permitting regime and must be renewed on an annual basis. Since each state is autonomous, laws, permits and authorisations may vary from state to state.

At a local level, activity reports must also be submitted on an annual basis before the environmental agencies of the corresponding states.

Notwithstanding the foregoing, all fixed sources must comply with certain obligations such as monitoring its air emissions and carrying out periodic analysis to confirm compliance with Mexican Official Standards that set forth the maximum permissible levels of pollutants that fixed sources are allowed to release.

Finally, and deriving from the United Nations Framework Convention on Climate Change, the Kyoto Protocol, the 2014 COP20 in Lima, Peru, and the 2015 COP 21 in Paris, in November and December 2015, the Mexican legal framework is also regulating said emissions by incorporating a national database of greenhouse gas emission sources, the National Emissions Registry, and by obliging said sources to present an annual report through the COA when generating greenhouse effect gases and compounds in amounts equal to or more than 25,000 tons of carbon dioxide.

ii Water quality

In accordance with Article 27 of the Constitution, bodies of water within the Mexican territory are national assets. In such regard, and as set forth in the National Waters Law, the primary regime for water consumption and water pollution, the following activities require authorisation from the National Water Commission:

a national water consumption (superficial and underground water);
b wastewater discharges into bodies of water under federal jurisdiction; and
c occupation of federal property.

In order to carry out said activities concession titles must be obtained, which are granted to private entities and individuals interested in carrying out the activities enlisted above for periods commonly going from 10 years to 30 years.

As holder of concession titles, certain obligations arise:

**National water consumption**

Quarterly consumption reports must be prepared and filed before the National Water Commission.

Governmental fees for national water exploitation must be covered on a quarterly basis.

In the event that the concessionaire does not extract the total volume of water granted under concession for a period of two consecutive years, a non-cancellation guarantee fee must be covered and an application for a cancellation interruption certificate must be filed before the National Water Commission to avoid said authority cancelling the unexploited volumes.

**Wastewater discharge permit**

In order to be granted a wastewater discharge permit it is necessary to comply with the Mexican Official Standards that set forth the maximum permissible levels of pollutants to be discharged into bodies of water under federal jurisdiction (NOM-001-SEMARNAT-1996) or with the specific discharge conditions imposed in the permit.
Periodic analysis of the wastewater being discharged must be carried out and the wastewater must be treated prior to the discharge.

Government fees in the event of discharging wastewater with surplus pollutants must be covered and a COA must be filed on an annual basis.

With regard to water supply and sewerage and drainage services, permits and agreements must be obtained or entered into with the local authorities (either state or municipal organisms), however, obligations also arise as follows.

**Water supply**
The terms and conditions of the water supply agreement must be complied with and the government fees for the water supply service covered.

**Local wastewater discharge permit**
The Mexican Official Standards, which set forth the maximum permissible levels of pollutants to be discharged into sewerage and drainage systems (NOM-002-SEMARNAT-1996), or the specific discharge conditions imposed in the permit must be complied with.

Periodic analysis of the wastewater being discharged must be carried out and the wastewater must be treated prior to the discharge.

Government fees in the event of discharging wastewater with surplus pollutants must be covered.

**iii Chemicals**
SEMARNAT published in 1996 the First and Second Listings of High-Risk Activities, which set forth those activities that are considered as high-risk activities because of the use of hazardous substances and materials in amounts exceeding the thresholds foreseen in said listings.

Those wishing to engage in high-risk activities must secure various authorisations, approvals and insurances in order to comply with the applicable legislation and to work in preventing any potential hazard or damage to the environmental or to human health.

Those wishing to carry out high-risk activities must prepare, prior to starting operations, an environmental risk study, which must be submitted before SEMARNAT for approval.

An accident prevention plan is also mandatory. Said plan must be submitted for SEMARNAT’s review in order for it to determine if the actions foreseen within are sufficient to attend any accident, incident or contingency that may arise because of the handling of the hazardous substances and materials.

An environmental liability insurance policy must be hired to cover any accident, incident or contingency potentially arising from the daily activities and operations with hazardous substances and materials.

The aforementioned permits are independent from any other permit, licence, authorisation or record that the activity may require in regards to civil protection and safety in the workplace, which are subjects ruled on locally by the civil protection agencies and by the Ministry of Labour.

Finally, it must be noted that activities using hazardous materials and substances in amounts below the thresholds set forth in the First and Second Listings of High-Risk
Activities will not be under federal jurisdiction, but nonetheless, they are regulated by state authorities and must secure the corresponding permits and authorisations from the environmental agencies on the jurisdiction where they are located.

iv Solid and hazardous waste

Wastes’ generation is ruled, in accordance with the General Law for the Prevention and Comprehensive Management of Wastes and its Regulation, by both SEMARNAT and local environmental agencies as follows:

Hazardous waste is a subject under federal jurisdiction and as such all generators of hazardous wastes must:

- register as hazardous waste generators;
- obtain hazardous waste handling plan approval (if the entity or individual generates 10 or more tons of hazardous waste per year); and
- have an insurance policy (if the entity or individual generates 10 or more tons of hazardous waste per year).

The aforementioned records and approvals may be secured through the sole environmental licence (see Section VI, supra) or individually.

In addition, the following obligations are triggered:

- keep a generation logbook;
- hire the services of companies authorised by SEMARNAT to provide the services of recollection, transport and disposal of hazardous waste;
- keep the manifests of recollection, transport and disposal of hazardous wastes provided by the hired providers of services; and
- file the COA on an annual basis (in the event that the entity or individual generates 10 or more tons of hazardous wastes per year).

Solid and special handling waste is regulated by local authorities and therefore, the permitting regime may vary from state to state; however, the most common permits and obligations for solid and special handling waste generators are:

Permits

It is necessary to register as a solid and special waste generator and to have a solid and special waste handling plan (when generating 10 or more tons of waste).

Obligations for the permit holders

Keep a generation logbook.

Hire the services of companies authorised by local environmental agencies to provide the services of recollection, transport and disposal of wastes.

Keep the manifests of collection, transport and disposal of waste provided by the hired providers of services.

File on an annual basis the local annual operating report (COAE or COI) (in the event that the entity or individual generates 10 or more tons of waste per year).

v Contaminated land

The subject of contaminated land with hazardous wastes or materials is under the jurisdiction of SEMARNAT, the agency responsible for granting the authorisations required to clean up
contaminated land, which works jointly with PROFEPA as the agency in charge of enforcing the provisions set forth either in the applicable legal provisions or in the authorisations themselves.

As a general rule, the party causing the pollution of land is responsible for implementing the necessary actions for its remediation; however, the fulfilment of these obligations can also be claimed from the owner or tenant of the polluted land, since they are jointly and severally liable for the fulfilment of this obligation by provision of law. When the pollution was not caused by the owner or tenant, they have grounds to claim from the polluter the reimbursement of the costs and expenses associated with the remediation actions; however, they cannot cast off from any responsibility before the authorities.

The party responsible for carrying out the remediation actions is obligated to file before SEMARNAT a remediation plan proposal for its review and approval. Once the plan is approved the responsible party is authorised to implement it through a service provided duly approved by SEMARNAT. The execution of the remediation plan is supervised by PROFEPA.

In order to minimise the risk of acquiring the liability of remediating a polluted land by a third party, it is always advisable to conduct Phase I and II environmental site assessments, the latter only if required, as part of the due diligence process for real estate transactions, complemented with strict environmental clauses in the corresponding agreements.

The reparation or compensation of the damages caused to the environment or any of its elements (i.e., atmosphere, water, soil, biodiversity, etc.) can be claimed under the provisions set forth by the Federal Law of Environmental Liability independently of any other liabilities that may arise.

The action ruled by the LFRA can be filed before a judicial court by PROFEPA, the local environmental protection agencies, individuals who live in the community within or adjacent to the area where the damage occurred and Mexican NGOs focused on the protection of the environment, only when representing a member of the affected community.

As a consequence of this action, the person responsible for causing the damage could be sentenced by the court, first and foremost, to repair the damage. Only when the damage cannot be repaired, either totally or partially, must the responsible person compensate it, totally or partially. In addition, when the damage derives from a wrongful wilful conduct, the court can impose an economic sanction that can add up to approximately US$2.4 million.

VII CLIMATE CHANGE

On 10 October 2012 the Climate Change General Law entered into effect, which, broadly speaking, rules the mitigation and adaptation measures for climate change, creates the National Emission Registry, and promotes the transition towards a competitive, sustainable and low-emission economy.

Most of the provisions set forth by the law do not foresee obligations to be observed by private parties but rather goals to be achieved by the governmental agencies.

The only obligation that private parties must comply with is related to providing information to the National Emission Registry, in which the greenhouse gas emissions produced by certain fixed sources must be recorded when they are equivalent to 25,000 tons of carbon dioxide per year. The list of fixed sources of pollution that falls into the scope of the Climate Change General Law is contemplated by its regulations and they belong to the energy, industrial, transportation, agriculture, wastes, trade and services sectors. The
greenhouse gas emissions that must be recorded are, among others, carbon dioxide, methane, nitrous oxide, black carbon, fluorinated gases, sulphur hexafluoride, nitrogen trifluoride, halogen ethers, halocarbons, any mix of the before mentioned gases as well as other gases identified by the Intergovernmental Panel on Climate Change (IPCC). This report must be filed through the federal annual operation report.

Since the National Emission Registry is still in the process of being implemented, there is not enough available public information to make an assessment of the achievements of the goals set forth in the Climate Change General Law.

VIII OUTLOOK AND CONCLUSIONS

The Mexican environmental legal framework is vast and complex but it does provide a comprehensive compilation of legal provisions for each of the most common means of pollution.

Indeed, legislation is always perfectable and is subject to constant changes and modifications as society demands them.

Perhaps the most important challenge for Mexico is that, due to the Energy Reform, new companies and investors will arrive to carry out activities that are now solely executed by the Mexican government. This implies that the Mexican government, through the environmental agencies, will have to work on the enforcement of the legal framework in an even more efficient manner.
Chapter 11

NETHERLANDS

Henry van Geen, Jochem Spaans, Seppe Stax and
Rob van der Hulle

I INTRODUCTION

This is an overview of Dutch environmental laws, including climate change legislation, highlights, trends and recent developments that are of importance when doing business in the Netherlands. The focus is on environmental laws applicable to operating industrial sites, ‘facilities’, but Dutch environmental legislation covers a much broader range of activities and products. This chapter therefore is an introduction only, and is limited to the European part of the Kingdom of the Netherlands (historically, certain island territories in the Caribbean form part of the Netherlands).

The Netherlands is a small, densely populated country and a Member State of the European Union (EU). It is home to one of the largest port and petrochemical areas in Europe, and is one of the world’s largest exporters of food and agricultural products. The Netherlands has a flat geography, a significant part of which is below sea level, and hosts a relatively large number of wetlands.

The Netherlands has a well-established system of environmental laws that is often perceived as detailed and complex. The Netherlands, furthermore, has a well-established system of inspections and enforcement, as is discussed in greater detail below.

The Dutch government has a tradition of being a frontrunner in respect of environmental protection within the EU. In implementing EU laws, the Dutch legislator often used to go beyond the level of protection agreed on a communal level. Recently, however, the Dutch legislator seems more keen on directly transposing EU requirements without introducing additional national requirements. Nonetheless, the Dutch government still has high policy ambitions in respect of various environmental topics, including climate change, the circular economy and promoting sustainability, including wind power.

1 Henry van Geen is a partner, Jochem Spaans is a counsel, Seppe Stax is an associate and Rob van der Hulle is an associate at Allen & Overy LLP.
Next to the various legal instruments available, increasingly, the Dutch government enters into agreements, known as ‘green deals’ with other authorities, NGOs and companies. The aim is to promote and accelerate sustainable innovation in the areas of energy, bio-based economy, mobility, water, food, biodiversity, resources, construction and climate. The green deal defines the initiative and the required action from each of the participants as clearly as possible, if possible in quantitative output objectives. To date, about 200 green deals have been closed, involving over 1,000 participants.

The scope and complexity of current environmental laws have triggered what is the largest system reform of Dutch environmental laws to date. This legislative project is ongoing, and aims for a full integration of virtually all environmental acts, including legislation on zoning and planning and on nature protection, into a single Environment and Planning Act. This system reform is not expected to be completed before 2019, and will have a significant impact on the environmental laws that apply to industrial facilities.

II LEGISLATIVE FRAMEWORK

The primary source of environmental law is the Dutch Environmental Management Act (EMA). The EMA contains an extensive set of rules with regard to various environmental topics, such as waste management, environmental impact assessment, greenhouse gas emission allowance trading, noise ceilings, air quality standards, etc. The EMA also serves as the legal framework for setting more detailed rules by order in council and ministerial decree, and numerous of such orders and decrees have been adopted under the EMA over time. In addition, the EMA describes the roles of municipal, provincial and national authorities in respect of environmental management.

Under the EMA, general environmental rules for facilities have been set in the Dutch Decree containing general rules for the regulation of facilities in the interest of protecting the environment (the Activities Decree). All facilities in the Netherlands (e.g., factories and offices buildings) are subject to the Activities Decree, which covers basically any environmental topic (noise, air emissions, soil, etc.). Inter alia, the Activities Decree prescribes that a zero base soil survey is conducted before starting operations (and requires that the soil is brought back to these conditions if the facility is shut down). Further general rules include air emission limit values and maximum noise and odour limits, as well as mandatory energy saving measures. Discretionary powers may exist for the competent authority to deviate from the general rules by means of ‘customised environmental requirements’ that apply to a specific facility, taking into account the specific circumstances of the case at hand. These general rules have been supplemented by detailed and technical rules set by the Activities Regulation, inter alia on monitoring.

In addition to the general rules that apply under the Activities Decree, designated facilities – commonly referred to in the Netherlands as ‘Type C’-facilities – also require an environmental operating permit. These include facilities in scope of the EU Integrated Pollution Prevention and Control (IPPC) regime (EU Directive 2010/75/EU on industrial emissions (integrated pollution prevention and control (IPPC facilities)) and other facilities that are deemed to have a more significant impact on the environment and have been designated as such. Permit conditions attached to environmental operating permits must be based upon the best available techniques, as detailed in reference documents. These include reference documents available on an EU level, commonly referred to as best available technique reference documents (BREFs). The issuance of permits, including procedural rules,
legal redress and enforcement action, is governed by the Act containing general provisions on environmental permitting (WABO). Supplemental requirements apply under the General Administrative Law Act.

The WABO forms the legal basis for also permitting various other activities (than operating a facility), such as building activities, deviating from a municipal zoning plan, activities that involve designated monuments, etc. Typically, an environmental operating permit will include various other activities as well, and is therefore referred to as an ‘integrated permit’. Note that certain designated activities in facilities – *inter alia* various specific waste handling activities – require a limited environmental permit under the WABO. Such a limited environmental permit does not contain permit conditions.

Various other environmental laws apply in the Netherlands, such as the recent Nature Protection Act that applies as of 1 January 2017 and provides the legal regime for protecting flora and fauna, Nature-2000 areas and the Dutch forests. Under the Nature Protection Act, the killing, disturbing and wounding of protected species is prohibited, unless an exemption has been obtained (or a general exemption applies). A permit is required for activities that may adversely affect a Nature-2000 area (e.g., due to nitrogen deposition).

Other acts include, for instance, the Soil Protection Act (SPA) – which is discussed in greater detail below – and the Water Act. The latter Act provides for a dedicated permitting regime for, *inter alia*, activities that may adversely impact the surface water quality (e.g., discharges of wastewater) or groundwater (e.g., groundwater extraction), and activities within water works (e.g., the construction and operation of an offshore wind farm).

In addition to the various acts, decrees and regulations, a body of guidelines, advice and other guidance documents exists, that is often prepared in consultation with business representatives and that covers a broad range of technical environmental topics. In some cases, the law explicitly refers to such documents and requires that their content is adhered to. In other cases, such documents are considered under case law to represent the latest technical insights, implying that the authority may rely on its content, for instance in issuing a permit. An important example forms the Publication Series on Dangerous Substances (PGS). The PGS requirements are especially important for companies that store gases and liquids, many of which are located at the large industrial port of Rotterdam. The Activities Decree refers to the PGS. The PGS is updated from time to time as technology progresses.

### III THE REGULATORS

Who the regulator is in respect of environmental matters depends on the matter involved. In respect of facilities, in principle, the municipality in which a facility is located is the authority empowered to issue permits or take enforcement action. In some cases, this power resides with the province instead. This, more specifically, concerns IPPC facilities and designated facilities that are in scope of the Dutch Risks of Major Accidents Decree 2015. Under very specific circumstances, the Minister for Infrastructure and the Environment (the Minister) is the competent authority.

In other matters, who the regulator is may vary. For instance, in matters concerning nature protection, powers often reside with the province, while in product stewardship matters powers often reside with the Minister.

Day-to-day handling of environmental matters on a municipal and provincial level is carried out by regional environmental bodies, while on a national level, inspections and
enforcement are carried out by the Human Environment and Transport Inspectorate (ILT), acting on behalf of the Minister or the State Secretary for Infrastructure and the Environment. Other national inspectorate bodies and departments may be involved as well.

A violation of environmental law may also be considered a criminal offence and may therefore be investigated by the police and criminally prosecuted by the Public Prosecutor, which is discussed below.

IV ENFORCEMENT

Under Dutch environmental law, scope for enforcement, including general rules and permit conditions, exists under both administrative and criminal law. In addition, anyone incurring damages as a result of the infringement may seek an injunction or compensation of damages under civil law.

i Administrative law enforcement

Enforcement under administrative law is primarily aimed at undoing the violation and preventing new violations from occurring, while criminal proceedings are aimed at imposing a punitive sanction. The most common administrative law sanctions are an order under administrative coercion and an order under penalty payment. In case of an order under administrative coercion, the government will remedy the violation at the expense of the violator after expiry of a mandatory grace period. In case of an order under penalty payment, a penalty is forfeited for the duration that the violation continues to exist after the grace period. No maximum amount applies in respect of the order under penalty payment, but the penalty must be proportionate, yet effective. Further administrative sanctions include withdrawal of the environmental operating permit, which is usually seen as a last resort measure, while in designated cases an administrative fine may be imposed (e.g., for certain violations in respect of the Emissions Trading Scheme). A recent trend under environmental law is the broader introduction of such administrative fines. For instance, the recent Nature Protection Act allows for imposing administrative fines in respect of certain violations. It is anticipated that under the future Environment and Planning Act, administrative fines will become a common sanction in environmental law.

The authorities may take enforcement action *ex officio*, or upon request by a third party, including a competitor. Violations must in principle be enforced. Exceptions may include that legalisation is imminent (e.g., the authority is about to issue a permit that takes away the violation), or if enforcement action is deemed disproportionate, which is not often the case. Also, enforcement action may not be taken where the authority’s reasonable policy dictates otherwise, for instance stipulating that a warning letter is sent first. Dutch authorities often send warning letters, and in most cases a draft version of the sanction decision must be sent first, allowing the addressee to submit its views on the intended sanction. In case a violation is tolerated, this should in principle take the form of a formal decision to tolerate, imposing a deadline and conditions that mitigate the impact of the violation. In practice, however, occasionally no enforcement action will be taken without a decision to tolerate. A general trend is, however, that authorities are more stringent when it comes to inspections and taking enforcement action. In this respect, almost all authorities have adopted a nationwide enforcement strategy, which provides for a uniform approach to environmental violations.

In the spring of 2016, a new Act was introduced aimed at enhancing the quality of permit issuance, inspections and enforcement action. This Act consolidates the various
regional environmental bodies that have over the past years been set up in the Netherlands. These bodies – of which DCMR in the Rotterdam area is the best known – consist of environmental experts who act on behalf of the various authorities in the region, by issuing permits, carrying out inspections and taking enforcement action. A number of dedicated regional environmental bodies deal with (external) safety issues. One of the key elements of said Act is the duty of all authorities involved, including criminal authorities, to share information with each other. Software tools have been developed to assist in this. For instance, the national software tool ‘InspectieView’ allows the authorities to gather information on inspections carried out by other authorities at a specific facility but also allows for analysis on a sector or area level. The Act further imposes various organisational requirements, all aimed at enhancing the quality and effectiveness of administrative inspections and enforcement.

ii Criminal law enforcement

The Public Prosecutor’s office is charged with enforcement pursuant to criminal law. Both legal entities and natural persons may be prosecuted for criminal offences. A legal entity can be held criminally liable for any criminal act that can be attributed to it. Whether an offence can be attributed to a legal entity will depend on the specific circumstances, including on whether the offence is within the normal activities of the legal entity and whether the legal entity exercised control over the offence. Officers of the company can also be held criminally liable when they have given factual directions regarding the event. Examples would include if the individual did not take measures to prevent the offence, even though he or she had the authority and reasonable duty to do so. In a decision of April 2016, the Supreme Court reconfirmed and clarified the position regarding criminal liability of the individual who has given factual directions regarding the offence.2

Most violations of specific environmental laws and regulations have been designated as criminal offences. The Dutch Penal Code also provides for a number of general environmental offences, including a prohibition on bringing any substance in the soil, air or surface water, and a duty for operators of industrial plants to take reasonable measures to prevent or limit danger to health or the environment when producing or making available substances, preparations or GMOs.

For most offences, Dutch law makes a distinction between acting ‘at fault’, or with ‘intent’, which, if proven, results in more severe punishment. Fault is the lightest form of culpability under Dutch law: the mere fact that culpability can be established (e.g., recklessness, knowledge, neglect) suffices. Intent can also be presumed to be present if a defendant knowingly and willingly accepted the considerable chance that harm would occur. If safety measures are not complied with, this can also lead to the establishment of ‘intent’.

In addition to the above, an ‘on-the-spot’ criminal fine may be imposed for less severe violations of environmental law. This fine is intended to serve as an on-the-spot, punitive sanction and may be imposed by government decision instead of a court ruling. The fines are relatively limited and legal redress is available.

iii Civil law enforcement

Civil law is rarely applied to achieve enforcement objectives, though the authorities may also file civil law claims against polluters if no administrative law instruments are available.

2 Supreme Court, 26 April 2016, ECLI:NL:HR:2016:733.
Anyone incurring damages as a result of a violation of a statutory duty, a property right, or an unwritten duty of proper social conduct that can also be regarded as a fault, can seek an injunction or compensation of damages under civil law from the perpetrator. A related application of civil law to achieve policy objectives is the ‘Urgenda’ litigation, discussed in Section VII, infra. Whether this will evolve into a trend remains to be seen.

V REPORTING AND DISCLOSURE

Typically, permit conditions will require the permit holder to report the facility’s emissions to the competent authorities on a frequent basis (monthly, quarterly, etc.). Similar reporting requirements apply under the Activities Decree in respect of the general rules set. Also, companies participating in the EU Emissions Trading System (ETS) must report on their emissions annually, in the form of a verified emissions report. Whereas such reporting requirements concern the normal business operations, additional requirements apply to specific events, the main ones of which are the following:

Under the EMA, unforeseen incidents that occur within a facility and that have, or threaten to have, a negative impact on the environment, must immediately be reported to the authorities. An unforeseen incident is any event that deviates from normal business operations and includes calamities and accidents as well as failures in the production process. Over and above the reporting requirement, additional requirements apply to the operator aimed at preventing, limiting or undoing a negative impact onto the environment.

For IPPC facilities the EMA imposes a similar reporting requirement in case of any non-compliance with permit conditions and general rules, other than caused by an unforeseen incident.

In addition, under the SPA, anyone conducting or involved in activities that cause soil contamination must immediately report the contamination to the authorities. As will be discussed in Section VI.v, infra, in such case a duty of care applies, requiring the polluter to prevent, limit and undo the contamination as much as possible.

Additional reporting regimes are in place in respect of specific activities. For instance, a reporting requirement similar to the requirement under the SPA applies under the Water Act in respect of activities that pollute river banks. Also, a reporting requirement applies under the Act on transport of dangerous substances in case of accidents or other incidents that may pose a risk to public safety. Furthermore, self-reporting obligations have been imposed by EU product stewardship legislation, such as the Dutch implementing laws for the EU’s Restriction of Hazardous Substances (RoHS) Directive 2011/65/EU, which require the manufacturer to inform the authority when he or she has reason to believe that his or her product does not comply and poses a risk.

There is no specific rule on disclosure of environmental information in transactions. Under the Dutch Civil Code, however, the seller must disclose information, including information that the seller should know may be relevant for the buyer, while the buyer is under obligation to make its own due investigations. Although this depends on the merits of the case (including on the professionalism of the parties involved and what information is available in the public domain already, such as soil contamination registered in the Land Register, etc.), typically the seller’s disclosure requirement will prevail over the buyer’s duty to investigate. The seller is thus likely to be liable for failure to disclose information, which
was not self-evident. In transactions, it is common for the buyer to require warranties and indemnities for environmental matters from the seller. Usually, this is in itself a driver for the seller to disclose information.

As per 1 July 2016, a new Act is in place aimed at protecting whistle-blowers, including in respect of environmental matters. The Act requires employers that employ at least 50 people, to set up internal procedures for the handling of internal abuse notifications. Labour laws protect the position of whistle-blowers, while a dedicated government agency has been set up providing general information as well as advice in actual whistle-blowing cases.

VI ENVIRONMENTAL PROTECTION

i Air quality

Air quality standards are primarily laid down in the EMA and the Dutch Decree regarding not contributing to a significant degree. Emission standards and related requirements are set in the Activities Decree, for instance, with respect to combustion plants. The various standards and requirements *inter alia* concern NOx, SOx and particle pollution but also substances of very high concern. These standards and requirements should be taken into account when determining whether an environmental permit for a facility may be granted. If an application for such permit has been submitted, the application should also include an assessment on whether the activities conducted within a facility do not lead to the exceeding of the applicable quality standards.

In the near future, the above discussed rules will be included in the new Environment and Planning Act.

ii Water quality

The water quality regime in the Netherlands is primarily laid down in the Water Act. Said Act requires the Minister, in consultation with the Minister of Economic Affairs, to adopt a National Water Plan, as well as the provincial council of each province in the Netherlands to adopt regional water plans. The current National Water Plan is valid until 2021 and contains the principles and the framework of the national water policy. The National Water Plan refers to the EU Water Framework Directive 2000/60/EC (WFD) and aims to further improve the water quality in line with the WFD. Further to the obligation to adopt a National Water Plan and regional water plans, the Water Act prohibits the discharge of wastewater or contaminating or hazardous substances in surface waters, except when the discharge of these substances is allowed for under a water permit or the general rules laid down in the Water Decree.

The water quality standards mentioned in the WFD have been implemented in the Dutch Decree on quality requirements and monitoring for water 2009. Until recently, these standards were only taken into account when adopting the National Water Plan. However, following case law of the European Court of Justice (ECJ), the Minister has indicated that the quality standards should also be taken into account when deciding upon an application for a water permit for the discharge of wastewater or contaminating or hazardous substances in surface waters. As a result, the quality standards will also become part of the framework on the basis of which it is asserted whether a water permit can be issued.

In the near future, the rules discussed above will be included in the new Environment and Planning Act.
iii Chemicals

Similar standards for the manufacturing, supply and safe use of chemicals apply across the entire European Economic Area (EEA), which includes the EU Member States, Iceland, Liechtenstein and Norway. In the Netherlands, as in any EU Member State, Regulation (EC) No. 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) has direct application. The aims of REACH include the protection of human health and the environment from the risks that can be posed by chemicals.

REACH establishes procedures for collecting and assessing information on the properties and hazards of substances. Companies need to register their substances and to do this they need to work together with other companies who register the same substance. The European Chemicals Agency (ECHA), the central regulatory authority in the implementation of REACH, receives and evaluates individual registrations for their compliance.

To allow companies and authorities to manage the workload related to registering chemicals, REACH introduced a staggered system for substances which were already on the European market in 2007 and which were pre-registered by 1 December 2008 (or in certain circumstances, a later pre-registration date) in accordance with REACH (phase-in substances). The most hazardous substances and those manufactured or imported in the largest quantities were to be registered first, in 2010, followed by the registration of chemicals in 2013 that were manufactured or imported at 100–1,000 tonnes a year. Finally, the chemicals manufactured or imported between 1–100 tonnes per year per company are to be registered last, before 31 May 2018.

ECHA has indicated that the 2018 registration will be quite different from the two previous ones, in terms of both the number of registrations and the type of registrants, which will include inexperienced players from outside the chemical sector, and more small and medium-sized enterprises.

Substances that do not fulfil the criteria for phase-in substances must be registered before they can be manufactured or imported in the EU.

The EU Member States evaluate selected substances and examine the quality of the registration dossiers and the testing proposals to clarify initial concerns for human health or for the environment. Authorities can ban hazardous substances if their risks are unmanageable. They can also decide to restrict a use or make it subject to a prior authorisation.

REACH impacts on a wide range of companies across many sectors, including manufacturers and importers into the EU. To a limited extent, downstream users may also have some responsibilities under REACH. The specific obligations that companies have depend on the type of products involved: substances on their own, including metals, mixtures, or articles.

In the Netherlands, Bureau REACH performs most tasks pursuant to REACH, including the management of the REACH helpdesk (http://reachhelpdesk.nl/). Enforcement is the responsibility of a cooperation of the Labour Inspectorate (I-SZW), the Food and Goods Authority (NWVA) and the ILT.

Detailed guidelines exist regarding the storage and handling of hazardous substances: the Publication Series on Dangerous Substances (PGS). These guidelines apply to nearly all industrial facilities, through a reference in the Activities Decree, or in the environmental operating permit.
iv Solid and hazardous waste

Waste storage, transportation and disposal are controlled by a variety of legislation, both at a national and a regional level. Increasingly, there has been a legal emphasis on waste prevention and minimisation.

The EMA is the main Act setting out the obligations in respect of waste management and transportation. It defines the roles of parties involved in the waste processing chain such as the ‘disposer’, ‘transporter’ and ‘collector’ of waste, each having specific rights and obligations. For example, business waste may only be transferred to a permitted waste collector or certified transporter. In addition, the EMA has set a national landfill ban (i.e., landfiling may only occur at designated areas). Furthermore, on the basis of the EMA, a National Waste Management Plan must be drawn up setting out the national waste management policy for the years to come.

Similar to REACH, the EU Waste Transportation Regulation (EC) 1013/2006 applies in the Netherlands (and other EU Member States), setting out the legal requirements for transportation of waste from and to the Netherlands (e.g., transport of dangerous waste needs to be notified).

In the near future, the above-discussed (national) rules will be included in the new Environment and Planning Act.

Circular economy

The concept of a circular economy – where the value of products, materials and resources is maintained in the economy for as long as possible, and the generation of waste minimised – has been embraced by the Dutch government. The Netherlands positions itself within the EU as a circular hotspot, and various ‘green deals’ on circular initiatives have been agreed upon by (semi-) public institutions and commercial parties. Next to these market initiatives, in the summer of 2016, a policy programme named ‘The Netherlands circular in 2050’ was presented to the Dutch parliament. Much of the policy initiatives concern waste management and the recovery of raw materials from waste, although it must be noted that the Dutch government is bound to the EU law concept of ‘waste’.

Shell case

In respect of the latter, the judgment of the ECJ of 12 December 2013 in the Shell case (Cases C-241/12 and C-242/12) is worth mentioning here. This case concerned ultra light sulphur diesel (ULSD) that was accidentally mixed with methyl tertiary butyl ether (MTBE). Because the flashpoint of the mixture was too low for it to be resold as fuel for diesel engines, the mixture was off spec. The District Court in Rotterdam filed a request for a preliminary ruling to the ECJ on the question whether the mixture could be qualified as waste. Under the EU Waste Framework Directive 2008/98 any substance or object that the holder discards, or intends or is required to discard can be considered as waste. The ECJ ruled that the mixture of ULSD and MTBE did not qualify as waste. According to the ECJ, particular attention must be paid to whether the substance in question is of any use to its holder, such that the substance constitutes a burden which he or she will seek to discard in a way that is likely to cause harm to the environment. In the present case, however, the mixture of ULSD and MTBE did not constitute a burden. On the contrary, the holder had sent back the mixture with the intention of getting a refund under the sales contract, while the recipient had taken back the mixture with the intention of blending it and placing it back on the market.
The judgment of the ECJ in the *Shell* case has not gone unnoticed by the Dutch Council of State, the highest administrative judge in the Netherlands. The key factor for the Council of State in determining whether an object or substance can be considered as waste now appears to be whether the object or substance in question constitutes a burden for the holder which he or she will seek to discard in a way which is likely to harm the environment. Based on that factor, the Council of State has ruled, for example, that electric devices returned by customers do not qualify as waste, even those that should be repaired first in order to be reused. The Council of State reached the same conclusion in respect of flux-oil which still contained minor contaminations.

### Contaminated land

The most important requirements regarding prevention and remediation of contaminated soil and groundwater have been laid down in the SPA. The SPA distinguishes between ‘historical’ soil and groundwater contamination (caused before 1 January 1987) and ‘new’ soil and groundwater contamination (caused from 1 January 1987 onward). All new soil contamination must be prevented as far as possible, and in the event that new soil or groundwater contamination occurs nonetheless, all new contamination must be cleaned up. For historical soil contamination, remediation requirements only apply if the soil contamination is considered ‘severe’ and an urgent clean-up is required. Whether contamination must be deemed severe contamination is determined by a number of factors, including whether certain limit values (intervention values) are exceeded. The urgency of a clean-up depends on a risk assessment.

Anyone who intends to remediate or move contamination must notify the authorities. Remediation may, in principle, only be carried out in accordance with a remediation plan that has been approved by the authorities. The objective of the clean-up should be that the soil becomes suitable for the intended use. Upon completion of the clean-up, a final report must be issued to the authorities for approval. The authorities will determine whether the clean-up meets the conditions stated in the remediation plan. If the contamination has not been entirely removed, restrictions regarding the use of the soil and ‘aftercare’ requirements may also be imposed. The authorities may also require remediation prior to redevelopment as a condition of planning permission.

In theory, under the SPA, the polluter is primarily responsible for the contamination; if the polluter no longer exists or is not creditworthy, the landowner will be held responsible, regardless of whether he contributed to the contamination. However, the authorities have discretion in deciding whether to assign responsibility for remediation to either the polluter or the landowner, and in practice, the polluter plays a very limited role in the discussions.

The SPA does not deal with apportioning liability and recourse between the various parties that may be held responsible. That should be determined under rules of civil law. A party that is held responsible by the authorities for a remediation under the SPA, or otherwise incurs cost in relation to contamination he or she did not cause, may try to take recourse against the polluter on the basis of tort, or against the party from whom he or she acquired...

---

the site. In addition, an owner of a site from which contamination migrates to an adjacent site may be held liable by the owner of the adjacent site, regardless of whether the owner of the site caused the contamination.

In the near future, the rules regarding prevention and remediation of contaminated soil and groundwater will be included in the new Environment and Planning Act (in the proposed bill for new soil protection legislation, the role of the polluter is even more limited). The focus on the landowner, which is already actual practice, will be formalised and the SPA will be withdrawn.

VII CLIMATE CHANGE

In the Netherlands, several laws and other initiatives are in place aimed at reducing greenhouse gas emissions and improving energy efficiency. In September 2013, the Dutch government entered into a national Energy Agreement for Sustainable Growth with various stakeholders. The agreement outlines a long-term strategy for renewable growth in the Netherlands. Offshore wind power has been identified as one of the key technologies to achieving the renewable energy targets.

New global climate change ambitions have been set by the Paris Treaty of December 2015. In follow-up, in September 2016, two members of the Dutch parliament have proposed a Climate Act to anchor these ambitions into Dutch legislation. The bill puts clear long-term targets in place and provides for new policy instruments, such as a climate change plan and budget, but does not stipulate how these targets must be met. Therefore it is currently unclear how the proposed Climate Act, if adopted, would affect Dutch climate change policy.

The EU Energy Efficiency Directive 2012/27/EU has been implemented in the Activities Decree. Among others, companies are required to conduct energy audits (every four years) in order to identify energy-saving measures that could decrease energy consumption within their businesses. In addition, all energy-saving measures with a payback period of five years or less must be taken.

ETS

As any other EU Member State, the Netherlands participates in the ETS for trading greenhouse gas emission allowances. The Dutch implementing laws are contained in the EMA, and require that listed facilities obtain a separate greenhouse gas emission permit from the Dutch Emissions Authority (NEa). Said permit will not impose emission limits, but instead will set out the framework for the facility’s monitoring plan. Companies must monitor their emissions throughout the year in accordance with this plan, and annually report on their emissions by means of a verified emissions report. Subsequently, the participating facilities must surrender sufficient allowances in order to compensate the emissions of the previous year. In most cases, facilities are eligible for a quantity of free allowances, while further emission allowances may be obtained through auctions or transactions with other parties participating in the ETS. According to the website of the NEa, around 450 companies in the Netherlands participate in the ETS, including industrial sectors and energy companies. The aviation industry has also been a participant in the system since 2012. During the current third phase of the ETS (2013–2020), auctions will gradually replace free allocation as the most important method for allocating allowances.
In the near future, the above-discussed (national) rules will be included in the new Environment and Planning Act.

ii Urgenda case

One of the most remarkable judgments relating to climate change is without doubt the landmark judgment of the District Court in The Hague of 24 June 2015. This judgment not only caught the attention of the Dutch media, but also that of the foreign media. The District Court in The Hague ruled that the state of the Netherlands must take more action to reduce the greenhouse gas emissions. More specifically, the state has to ensure that the Dutch greenhouse gas emissions in the year 2020 will be at least 25 per cent lower than those in 1990. This is the first time that a court has ordered a government to set higher climate change targets. Not surprisingly, the ruling has encountered criticism. According to some scholars, the District Court’s ruling violates well-established case law of the Dutch Supreme Court, holding that a mandatory order to the legislature is fundamentally at odds with the constitutional role of the judiciary and therefore not possible. Some scholars have even argued that climate change is a political issue which should not be addressed in court at all. In September 2015, the Dutch cabinet filed an appeal against the District Court’s ruling. A decision on the appeal may be expected in the second half of 2017.

iii Offshore Wind Energy Act

An Offshore Wind Energy Act (OWEA), entered into force on 1 July 2015 and provides for a completely new legal framework for the construction and operation of offshore wind farms. The OWEA aims to accelerate and streamline the decisions and authorisations required for an offshore wind farm. In short, the OWEA distinguishes between three stages of decision-making: (1) the determination of areas for the construction of wind farms in the National Water Plan; (2) the adoption of site decisions by the Minister of Economic Affairs in consultation with the Minister, which specifies the exact location and the conditions under which a wind farm can be constructed and operated; and (3) the issuance of a permit to a project developer that entails the exclusive right to construct and operate the wind farm. One of the designated areas for the construction and operation of offshore wind farms is called Borssele, which is located approximately 22 kilometres off the coast of the province of Zeeland. For this area, site decisions and permits have already been adopted and granted. Another designated area is called ‘Hollandse Kust’. Site decisions for that area will be adopted soon.

VIII OUTLOOK AND CONCLUSIONS

As indicated, Dutch environmental law is on the eve of the largest system reform to date: the introduction of the Environment and Planning Act and its implementing legislation. Through the Act, the Dutch government aims to combine and simplify the regulations for projects that have an impact on the environment. The Act integrates 26 current acts (including, for instance, the above-mentioned Water Act, but also the Crisis and Recovery Act and legislation on zoning and planning, etc.), reducing 5,000 statutory provisions to 350, 120 orders in council to four, and 120 ministerial decrees to 10. The Act should result in fewer regulations applying to a project and reduce the burden on companies, *inter alia* in respect of conducting studies. Moreover, the Act aims for quicker and better decision-making, allowing more room for private initiatives.
The upcoming Environment and Planning Act will heavily impact Dutch environmental law, and at least in the longer term provide for a more streamlined and simplified set of legal requirements. In the shorter term, it must be noted that this system reform follows relatively shortly after the introduction of the Water Act in 2009 and WABO in 2010. At that time, these Acts already meant a major shift in Dutch environmental law, and their introduction showed that the day-to-day legal practice requires some time to adapt to new laws and regulations. It is, therefore, likely to take some time before the benefits of the upcoming Environment and Planning Act are truly enjoyed.
I  INTRODUCTION

The Portuguese economy is recovering from the EU/IMF Economic Adjustment Programme for Portugal. The Programme, which covered the 2011–2014 period, provided official sector financing by the European Union, the eurozone Member States and the IMF of approximately €78 billion, for Portugal’s possible fiscal financing needs and support to the banking system.

Although the programme succeeded in improving public finances, stabilising the financial sector, and setting the economy onto a path towards recovery, the Portuguese economy remains vulnerable and faces many challenges to become competitive, agile and resilient.

Nonetheless, throughout the implementation of the programme, public policies regarding environment and climate change continued to be enforced and significant changes to the legal framework occurred.

At end of 2015, the socialist party, backed by the other left-wing parties in Parliament, formed a new government, overthrowing the coalition of right-wing parties in power since 2011.

As of December 2015 the new government has been focused on reversing austerity measures adopted during the Economic Adjustment Programme and on strengthening the economy. Few noteworthy legal regimes focused on environmental issues have been published since, the majority of them have originated from EU law or were published in order to comply with EU targets and objectives.

In this context, during 2016, the most relevant legal framework includes the new legal regime for multi-municipal high-end water management services, the National Air Strategy, the creation of two funds: the Blue Fund (development of the economy of the sea, scientific research and protection and monitoring of the marine environment) and the Environmental Fund (comprising the former Portuguese Carbon Fund, Environmental Intervention Fund,
Water Resources Protection Fund and Biodiversity and Nature Conservation Fund), a new national water plan, the ratification of the Paris Agreement on Climate Change and new rules regarding packaging waste management entities and waste sorting targets and prices.

As regards planned legislative initiatives, we would highlight the circular economy strategy, the revision of the 2020 Urban Waste Strategic Plan (PERSU 2020) in order to meet the new targets of the EU Circular Economy Action Plan, the Coastal Zone Protection Action Plan 2016–2020, the improvement of the 2020 funding programme, the simplification of legislation related to the economy of the sea (including aquaculture activities) and the revision of the Climate Change Adaption Strategy.

II LEGISLATIVE FRAMEWORK

Environmental protection and climate change laws and regulations originate mainly from three sources – international treaties or conventions, EU law and national law.

International treaties and conventions, once signed, must see their ratification approved by a Resolution of Parliament and ratification itself shall occur by means of a Decree of the President of the Republic. Portugal is a party to all of the main treaties and conventions regarding environmental protection and climate change.

EU law is one of the main sources of environmental legislation, consisting mainly of Regulations and Directives. Regulations are directly enforceable in domestic law and do not need to be enacted. However, it is very common for a decree-law to be published in order to ensure the execution of the obligations of the Regulation into Portuguese law. Directives are subject to enactment into Portuguese law within a specific time frame. Many Directives, however, are enacted after the term has elapsed. Enactment occurs by means of publication of a decree-law in the Portuguese Official Gazette. The main legal regimes on environmental protection, including climate change, are a result of the enactment of EU Directives and of EU Regulations.

In relation to national law, the Constitution of the Portuguese Republic establishes that both Parliament and the government have legislative powers divided according to the specific matter at stake. While certain matters are of the exclusive competence of Parliament others are competence of the government, exclusively or subject to a legislative authorisation granted by Parliament. As regards the legislative acts themselves, laws are issued by Parliament while decree-laws, regulations, resolutions, regulation decrees, ministerial orders, ministerial dispatches, among other acts, are issued by the government. Legislative acts are published in the Portuguese Official Gazette.

III THE REGULATORS

The main regulatory agencies responsible for enforcing environmental legal framework are the following:

i The General Inspection of Environment, Spatial Planning, Agriculture and Sea
The General Inspection of Environment, Spatial Planning, Agriculture and Sea (IGAMAOT) is the main environmental inspection body. It carries out inspections regarding all activities and all public and private entities with environmental relevance, imposing the measures that prevent or eliminate situations of severe danger to human health, safety of persons, of goods
and of the environment. The IGAMAOT carries out specific functions equivalent to those of a criminal police body whenever an environmental crime may be at stake and may also initiate and decide misdemeanour procedures according to the Environmental Misdemeanour Framework Law. It may act and carry out inspections without previously being informed by other entities of a possible breach of environmental legislation and may enter any premises and carry out the inspections it deems necessary. It is normal for industrial operators to have their installations inspected without previous notice at least once every three years. The IGAMAOT is hierarchically dependent of the Deputy Minister to the Prime Minister, of the Minister of the Environment, of the Minister of Agriculture, Forests and Rural Development and of the Minister of the Sea.

ii The Portuguese Environment Agency

The Portuguese Environment Agency (APA)’s mission is to propose, develop and monitor the integrated and participated management of environmental and sustainable development policies, in tandem with other sectorial policies and in cooperation with public and private entities seeking the same purpose taking into view a high level of environmental protection and the rendering of high-quality services to citizens. The main functions of this regulatory body are (1) to propose, develop and monitor environmental policies, especially as regards climate change, management of water resources, waste, ozone layer protection, air quality, recovery and remediation of contaminated sites, integrated pollution prevention and control, noise prevention and control, prevention of major industrial accidents risks, environmental and population safety, ecological labelling, voluntary environmental compliance systems, as well as environmental impact assessment and environmental assessment of plans and programs; (2) act as National Water, Waste and Dam Authority; (3) develop and ensure the implementation strategic options, policies and measures envisaging a low carbon economy, in particular the mitigation of greenhouse gas emissions and adaptation to climate change, and to act as National Authority for the EU emissions trading system and as National Authority for the implementation of the Kyoto Protocol; (4) act as National Authority for integrated pollution prevention and control and for strategic environmental assessment; and (5) act as competent authority for the environmental liability regime. As regards the enforcement of climate change policies, the APA and the IGAMAOT are the most important agencies. The APA is subject to the control of the Minister of the Environment.

iii The Water and Waste Regulatory Authority

The Water and Waste Regulatory Authority (ERSAR) ensures the regulation and supervision of the water and waste services and aims to increase the efficiency and effectiveness of the provision of these services. It is responsible for establishing the water and waste tariffs and for ensuring the regulation of quality of service rendered to end users by management entities. ERSAR is an independent administrative agency according to the Regulatory Entity Framework Law and is not subject to governmental control.

iv The Institute for Nature Conservation and Forests

The Institute for Nature Conservation and Forests (ICNF)’s mission is to propose, develop and ensure the execution of nature conservation and forests policies, taking into view the conservation, sustainable use, recovery, use and recognition of the natural assets. Its main functions are (1) to act as National Authority for nature and biodiversity conservation and as National Forest Authority; and (2) to ensure the management of the national network
of protected areas and the implementation of the Natura 2000 network, including marine protected areas. The ICNF is subject to the control of the Minister of the Environment, the Minister of Agriculture, Forests and Rural Development, and the Minister of the Sea.

v Regional spatial planning commissions

There are five regional spatial planning commissions (CCDRs) within the Portuguese continental territory. Their mission is to execute the environment, planning, cities and regional development policies. They are responsible for executing, assessing and inspecting, at a regional level, the environmental and planning polices, in tandem with the other regulatory bodies of the Ministry of Environment. As regards environmental issues, their competences include, at a regional level, environmental assessment of projects, industrial licensing, soil decontamination operations, licensing of waste operations, air quality management and air pollution prevention, noise prevention, integrated pollution prevention and control, environmental assessment and licensing of quarries. The CCDRs are subject to the control of the Minister of Planning and Infrastructure, the Deputy Prime Minister and the Minister of the Environment.

vi The Directorate-General for Natural Resources and for Maritime Services and Safety

The mission of the Directorate-General for Natural Resources and for Maritime Services and Safety (DGRM) is to execute the policies for preservation and knowledge of natural marine resources, for fisheries, aquaculture, transformation industry and related activities, development of maritime services and safety, including the maritime ports sector. Some of its competences are:

- to ensure a framework of knowledge regarding the available marine resources within the Portuguese territory, regarding inventory, use and planning of the maritime space;
- to authorise and license structures and productive activities regarding maritime fishing and aquaculture;
- to exercise its functions regarding the prevention of pollution from ships;
- to propose, in tandem with the ICNF, the creation of protected marine areas; and
- to license and inspect the use of waters located in protected marine areas.

The DGRM is subject to the control of the Minister of the Environment and of the Minister of the Sea.

As regards the enforcement of environmental legislation by the courts, Portuguese courts traditionally tend be somewhat lenient and often reduce the amount of the fines determined by public regulatory authorities or of the criminal sentence proposed by the Public Prosecutor’s Office, whenever they consider said amount or sentence to be exaggerated. Furthermore, it should be noted that environmental misdemeanour procedures and crimes deal with matters that are of a very technical nature and the courts are not always comfortable to decide based on very specific technical and scientific details. Finally, as regards environmental misdemeanours, it should be noted that courts may decide differently from the regulatory authority that applied the fine and decide to apply a fine of a higher amount considering that the prohibition on imposing a heavier or stricter decision does not apply to the environmental misdemeanour procedures of the Environmental Misdemeanour Framework Law.
IV ENFORCEMENT

Whenever a violation of environmental laws and regulations occurs, different types of liability may arise.

As regards civil liability, the applicable regime under the Civil Code establishes that whoever, with wilful misconduct or negligence, causes damage to a third party must pay compensation to that party. Therefore, should any action resulting from an industrial operator, any individual or any activity cause damages to a third party, the latter will be entitled to request compensation. It should be noted that according to the causality principle under the civil liability regime, a causal link between the damage caused and the action or activity at stake must always exist. Strict liability will only apply whenever expressly foreseen by the law.

Administrative liability in relation to the state due to pollution or damage caused to the environment will also exist. Considering the ‘polluter pays’ principle, the liability and the recovery principles established in the Environmental Framework Law, any person or industrial operator that causes pollution or environmental damages will be liable for the damages caused, must bear the costs related to said damages including the costs associated with any prevention and control measures, must pay compensation whenever foreseen in the law and must also restore the environment to its previous state. Furthermore, for the purposes of administrative liability, the environmental liability regime is a key piece of legislation that must be taken into account. According to this legal regime, which enacted EU Directive 2004/35/EC, whenever environmental damage or the imminent threat of environmental damage occurs, the liable party must adopt prevention and repair measures and bear the associated costs. Strict liability will apply whenever the damage caused by the operator was a result of an activity listed in Annex III of the legal regime that contains a list of the activities considered to present a greater risk to the environment and to be more susceptible to causing environmental damage or threats. Additionally, mandatory financial guarantees must be put in place by operators that carry out the activities listed in Annex III in order to guarantee said measures. Third parties are also entitled to request compensation under the general rules of civil liability.

Misdemeanour liability due to pollution or environmental damage must also be taken into account. The vast majority of misdemeanours due to environmental damage are governed by the Environmental Misdemeanour Framework Law. According to this law environmental misdemeanours can be considered light, serious or very serious, depending on the gravity of the infraction.

For very serious environmental misdemeanours the applicable fine ranges between €10,000 and €200,000 for individuals and between €24,000 and €5 million for companies. Whenever the presence, emission or release of one or more hazardous substances seriously affects the health, safety of persons and goods and the environment, the minimum and maximum limits of the above-mentioned fines may be elevated to double the amount.

For serious environmental misdemeanours the applicable fine ranges between €2,000 and €40,000 for individuals and between €12,000 and €216,000 for companies.

In case of light environmental misdemeanours the applicable fine ranges between €200 and €4,000 for individuals and between €2,000 and €36,000 for companies.

Ancillary penalties can also be applied alongside very serious and serious environmental misdemeanours, comprising, among other things, the:

a prohibition to apply for subsidies and public benefits;
b prohibition to participate in public tenders;
c the suspension of licences and authorisations;
As regards the misdemeanour procedure itself, once an individual or operator is notified of an environmental misdemeanour procedure, he or she must present his or her defence to the regulatory authority that initiated the procedure within a maximum term of 15 working days. The final decision of the regulatory authority may be challenged in court.

Finally, the Criminal Code establishes the situations where criminal liability may arise due to the practice of environmental crimes as a result of damage to the environment or to nature.

The environmental crimes section of the Criminal Code establishes the following crimes:

a. Crime of damage to nature (Article 278): damage to biodiversity and serious damage to subsoil resources is punished with up to five years of imprisonment. Furthermore, the trading of protected wild fauna or flora species, alive or dead, is punished with imprisonment of up to a maximum of two years or with a fine of up to 360 days. The possession of said species is punished with imprisonment of up to a maximum of one year or with a fine of up to 240 days.

b. Crime of pollution (Article 279): if the agent pollutes the air, the water and the soil, he or she will be punished with up to five years of imprisonment. If the conduct of the agent does not cause pollution but is susceptible of affecting the air, water or soil quality or fauna or flora, it will punished up to a maximum of three years of imprisonment or with a fine of up to 600 days.

c. Crime of pollution with common danger (Article 280): whenever a conduct foreseen in Article 279 causes danger created to life or to the physical integrity, to other people’s assets with a high value or to cultural or historical monuments, it will be punished with imprisonment ranging from one to eight years if the conduct and the creation of danger is intentional and of up to a maximum of six years if the conduct is intentional and the creation of danger is due to negligence.

Companies and not only individuals may be considered subject to criminal liability due to the practice of an environmental crime under the terms foreseen in the Criminal Code.

V REPORTING AND DISCLOSURE

Portuguese law does not contain a general rule or procedure regarding the disclosure of permit violation, contamination or climate change. However, the main environmental legal regimes establish the obligation to report any breach, violation or malfunction to the competent authorities and to adopt all necessary measures to prevent or repair environmental damage.

Any industrial operator holder of an environmental licence (integrated pollution and prevention control) under the Industrial Emissions Regime must report to the authorities any breach or violation of legislation or of the applicable emission limit values (including emissions to water, soil or air), any malfunction of the industrial establishment or any complaint received. Furthermore, these operators are under the obligation to send to the APA, until 30 April each year, an annual environmental report containing all information regarding
the functioning of the industrial installation in the previous year, any breaches of legislation, malfunctions, complaints and any other information related to environmental compliance. The Industrial Emissions Regime establishes that any event that may significantly affect the environment must be notified to the authorities within 48 hours.

Under the environmental liability regime, whenever an imminent threat of environmental damage occurs, the operator must immediately adopt, irrespective of any notification or request by the authorities, the necessary and adequate prevention measures and inform the APA immediately of all details associated to said threat and of the measures taken. If environmental damage occurs, the legal regime foresees a maximum term of 24 hours within which the APA must be informed of all details related to the occurrence and the operator must immediately adopt, irrespective of any notification or request by the authorities, all feasible measures in order to control, contain, eliminate or manage pollution and contamination.

As regards the sale and purchase of property where pollution and contamination exists, there are no legal duties to disclose potential liabilities to purchasers. However, under the Civil Code there is an obligation to negotiate and execute contracts according to good faith principles. There is no legal obligation to disclose environmental liabilities in financial statements or reports.

VI ENVIRONMENTAL PROTECTION

i Air quality

The legal framework regarding air quality is set forth in Decree-Law 78/2004, as amended, which establishes the regime on prevention and control of pollutants into the atmosphere, applicable to industrial activities, production of electricity and heat, maintenance and repair of vehicles, combustion installations integrated in industrial, commercial or services establishments (including health services, education establishments and other public establishments) and to fuel storage activities.

The emission limit values regarding emissions to air are set forth in three ministerial orders:

- Ministerial Order 80/2006 (as amended), setting the minimum and maximum mass thresholds that define the monitoring conditions of emissions of pollutants to the atmosphere.
- Ministerial Order 675/2009 (as amended), setting the general emission limit values applicable to the majority of installations and establishments.
- Ministerial Order 677/2009 (as amended), setting the emission limit values for combustion installations.

It should be noted that for combustion installations which capacity is superior to 50MW, the applicable emission limit values are the ones set in the Industrial Emissions Regime, which enacted Directive 2010/75/EU and, therefore, as regards these installations, the emission limit values of Ministerial Order 677/2009 will not apply.

Operators do need to obtain a specific licence or authorisation for emissions to the air. However, the operation permit and, whenever applicable, the environmental licence, contain a specific reference or chapter with the emission limit values for atmospheric emissions and with the mandatory monitoring conditions. Monitoring obligations may be periodic or continuous. Whenever the mass flow emission is situated between the minimum and maximum mass thresholds set forth in Ministerial Order 80/2006, monitoring will be periodic and must occur
twice a year or, in certain particular situations, according to a different schedule. Continuous monitoring of atmospheric emissions is mandatory whenever the mass flow emission exceeds the maximum mass thresholds set forth in Ministerial Order 80/2006 or whenever the licence or authorisation for the functioning of the industrial establishment expressly determines that this type of monitoring must be carried out.

The Industrial Emissions Regime contains the emission limit values regarding emissions to the air to be complied with in relation to combustion installations whose capacity is more than 50MW, installations that use organic solvents and issue organic volatile compounds and installations that produce titanium dioxide.

According to the polluter pays principle and to Decree-Law 78/2004, an operator that causes damage to the environment through air pollution is under an obligation to pay compensation to the state and may also have to pay compensation to third parties under civil liability rules. The breach of this legal regime is a misdemeanour, which can be considered light or serious depending on its gravity, and determines the payment of fines. Public authorities can also force the operator to adopt the necessary measures in order to prevent or eliminate air pollution or an imminent threat situation, such as the suspension of activity, closing down the installation or seizure of equipment.

Whenever the breach refers to emission limit values contained in an environmental licence issued under the Industrial Emissions Regime, an environmental misdemeanour will be at stake and fines will apply, alongside with possible ancillary penalties.

We highlight that the environmental liability legal regime does not apply directly to damages caused to the air.

Finally, we would like to mention that emission limit values for air emissions are considered to be quite strict and it is not rare for operators to have difficulties in complying with the applicable legal framework.

ii Water quality

The Water Law (Law 58/2005), which enacted the EU Water Framework Directive (Directive 2000/60/EC) and the Water Use Legal Regime (Decree-Law 226-A/2007) are the two key legal regimes regarding water management, use and protection.

As regards quality standards, Decree-Law 236/98 establishes the rules, criteria and quality objectives with the purpose of protecting water quality. The annexes of this legal regime contain:

a the emission limit values to be observed in relation to the discharge of waste water to the water or to the soil taking into view their protection against pollution;

b the maximum values for the different parameters in water considering its use; and
c the environmental objectives for water resources.

Quality standards vary according to the type of water (surface water, groundwater, bathing water, fishing water, etc.) and to its purpose (e.g., human consumption). Annex XVIII contains the emission limit values for the discharge of wastewater.

These standards generally apply to all industries and activities and are in line with EU water quality standards set forth in EU Directives.

In relation to permits, the use of water resources and the occupation of the public hydric domain is subject to the previous obtainment of a water use title, which, depending on the type of use, can be a licence, a concession or an authorisation, issued by the APA, which
is the National Water Authority. The discharge of wastewater is normally subject to a licence. In case of industrial installations, subject to an environmental licence under the Industrial Emissions Regime, the use of water resources demands the separate obtainment of a water use title that will be annexed to the environmental licence.

According to the Water Law and to the Water Use Legal Regime the following activities are prohibited:

- **a** use of water resources without the necessary title. Deliberate dilution of wastewater so as to comply with emission limit value;
- **b** discharge of sludge in superficial or in underground waters;
- **c** immersion of waste in breach of the environmental objectives for the water bodies;
- **d** abandonment or unauthorised discharge of radioactive waste in superficial, underground, transition, coastal and sea waters and in wastewater drainage systems; and
- **e** according to Decree-Law 236/98, the direct discharge into groundwater of certain hazardous substances is also prohibited.

A new National Water Plan was recently published under Decree-Law 76/2016. This plan is foreseen in the Water Law and its purpose is to establish the strategic options of the national water policy to be implemented by the river basin management plans for the 2016–2021 period and by the associated specific measure programmes. Water management under this plan envisages three main objectives: (1) the protection and recovery of the status of aquatic ecosystems and also land ecosystems and wetlands dependent therefrom, as regards water necessities, (2) the promotion of a sustainable, balanced and equal use of water of a good-quality status, considering its various uses and its economic value, based on a long-term use of available water resources, and (3) the mitigation of the effects of flood and droughts.

The contents of this new plan will most probably determine, in the short run, the amendment of water quality standards in a stricter manner in order to ensure that Portugal meets water quality standards set at EU level.

### iii Chemicals

Decree-Law 82/2003 (as amended) approved the Regulation on Classification, Labelling, Packaging and Safety Data Sheets of Dangerous Mixtures. According to the Regulation, the mixtures can only be placed on the market if they are classified, labelled or packaged under the terms of the Decree-Law and of the Regulation.

This Decree-Law also establishes the obligation to provide information to the Directorate General for Economic Activities, to the Poison Information Centre and to the National Institute for Medical Emergency, to be carried out by the person or entity responsible for the placement of the mixture in the market.

Decree-Law 98/2010 establishes the regime on Classification, Labelling, Packaging of Hazardous Substances for human health or the environment taking into view their placement in the market. This legal regime (1) transposes Directive 2006/121/EC in order to adapt it to the Council Regulation (EC) No. 1907/2006, of 18 December, related to the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH Regulation); (2) guarantees the execution of Article 55 of Regulation EC 1272/2008, of 16 December, regarding the classification, labelling and packaging of substances and mixtures (CLP Regulation); and (3) enacts, in part, Directive 2008/112/EC.
Furthermore, Decree-Law 293/2009 ensures the implementation and execution of the obligations arising from REACH Regulation, which establishes a European Chemicals Agency and aims to ensure a high level of protection of human health and of the Environment, including the promotion of alternative methods for assessment of hazards of substances, as well as the free circulation of substances in the internal market while enhancing competitiveness and innovation.

REACH lays down some specific duties and obligations on manufacturers, importers and downstream users of substances on their own, in preparations and in articles. This Regulation is based on the principle that it is for manufacturers, importers and downstream users to ensure that they manufacture, place on the market and use such substances that do not adversely affect human health or the environment. Its provisions are underpinned by the precautionary principle.

REACH sets out procedures for the registration, evaluation, authorisation and restriction of chemicals, as follows.

The registration provisions should require manufacturers and importers to generate data on the substances they manufacture or import, to use said data to assess the risks related to these substances and to develop and recommend appropriate risk management measures. Registered substances should be allowed to circulate on the internal market.

The evaluation provisions should provide for follow-up to registration, by allowing for checks on whether registrations are in compliance with the requirements of REACH and if necessary by allowing for generation of more information on the properties of substances.

The authorisation provisions should ensure the good functioning of the internal market while assuring that the risks from substances of very high concern are properly controlled. For these purposes and in order to ensure that substances of very high concern are progressively replaced by suitable alternative substances or technologies, all manufacturers, importers and downstream users applying for authorisations shall analyse the availability of alternatives and consider their risks, and the technical and economic feasibility of substitution.

The restriction provisions should allow the manufacturing, placing on the market and use of substances presenting risks that need to be addressed, to be made subject to total or partial bans or other restrictions, based on an assessment of those risks.

Manufacturers and importers are also obliged to register relevant information in a central database (European Chemicals Agency (ECHA)).

REACH entered into force in 2007 and its provisions are being phased-in over 11 years.

As regards national requirements, according to the REACH Regulation the person or entity responsible for the placement of dangerous substances in the market shall: (1) provide relevant information on those substances to the Poison Information Centre and to the National Institute for Medical Emergency, prior to placing them in the market; and (2) make available the relevant information on the substances classified as hazardous, to the IGAMAOT and to the Authority for Economic and Food Safety.

All permit applications must be complete and truthful and all permit requirements carefully followed. Required environmental controls and equipment shall not be neglected (except as allowed by and in compliance with the law).

iv Solid and hazardous waste

The Waste Management Legal Regime (Decree-Law 73/2011 as amended) is the framework legal regime regarding waste management, applicable to both hazardous and non-hazardous waste.
Waste management activities are subject to a licensing procedure directed by the APA or by the CCDRs.

Whenever a waste management activity is carried out in installations included in the thresholds of Annex I of the Environmental Impact Assessment Legal Regime the licensing authority will be the APA. In all other situations, including soil decontamination operations, the licensing authority will be the CCDR. A specific licence will be issued in relation to the waste management activity (e.g., collection, transportation, recovery and elimination).

As regards waste elimination, operators of landfill sites must obtain an environmental licence according to the Industrial Emissions Regime, as well as two insurances: (1) insurance to cover closure and post-closure obligations; and (2) insurance to cover accidental pollution events. These operators must also have a fully paid up share capital of at least:

- \( a \) €250,000 (for inert waste landfills); and
- \( b \) €1 million (for hazardous or non-hazardous waste landfills).

It should be noted that the elimination of hazardous waste in specific facilities is subject to an autonomous legal regime.

Furthermore, operators that carry out the collection, transportation, recovery and elimination of hazardous waste must hold a financial guarantee to cover their environmental liability under the environmental liability regime.

v Contaminated land

Although this matter has been extensively discussed by various governments and by various sectors of society, Portugal does not have a specific legal regime for contaminated land. Whenever it is necessary to carry out soil decontamination operations they will be subject to previous licensing under the Waste Management Legal Regime by the CCDRs.

In 2011, the APA issued a non-binding guide regarding the assessment of imminent threat and environmental damage according to the Environmental Liability Regime (Decree-Law 147/2008). The guide contains a specific chapter on how to assess damages to soil and soil contamination situations, including prevention measures, risk analysis and repair and monitoring plans. The Ontario Rules for soil decontamination are the reference used to assess the level of contaminants in the soil.

Landowners are not required by law to investigate and assess the contamination level of their property although regulatory authorities can order assessments and clean-up operations whenever a pollution or contamination event is verified or comes to their knowledge.

According the polluter pays principle, the operator responsible for causing pollution or environmental damage is liable and must carry out and pay the costs associated to environmental damage and clean up, adopting the necessary measures to prevent further threats and damages to the environment. However, in cases where the owner of the land was not the polluter, if there is an imminent threat or serious danger to the environment, authorities can demand that the current owner carry out the environmental investigation and clean up, including prevention and remediation measures. In these cases, the owner shall have a right of redress in relation to the liable party. Public authorities may also carry out the clean-up and decontamination operations directly with right of redress in relation to the liable party.

The majority of the environmental legal framework applicable to activities that are most likely to cause pollution demand operators to hold financial guarantees to cover their liability in relation to pollution events, including the Environmental Liability Regime.
Whenever environmental damages are caused and this legal regime applies the operator must adopt prevention and remediation measures. In case the operator does not have the capacity or know-how to carry out in situ decontamination he or she may hire a specialised company to carry out the operation or, alternatively, remove the contaminated soil from the site or installation and deliver it to a duly licensed waste management operator. The failure to adopt prevention or remediation measures when directly determined by the APA is a very serious environmental misdemeanour. The failure to immediately adopt prevention or remediation measures, when an imminent threat or environmental damage occurs, is a serious environmental misdemeanour.

In September 2015 the APA disclosed a legislative proposal regarding a legal regime for the prevention of soil contamination and for soil remediation and launched a public hearing open to all citizens. Up to the present date, however, there has been no news from public authorities or from the Ministry of Environment regarding this proposal.

VII CLIMATE CHANGE


Operators subject to this legal regime must hold a permit allowing them to emit greenhouse gases (GHG). GHG emissions must be monitored and certified annually and this information sent to the APA. The permit is annexed to the environmental licence of the operator issued under the Industrial Emissions Regime. The auctioning of allowances is also foreseen and is carried out according to the EU Emissions Trading Scheme Auctioning Regulation (Regulation 1031/2010).

According to the Climate and Energy Package 2020 for the 2013 to 2020 period, Portugal must limit the increase of GHG emissions for the sectors not included in the EU Emissions Trading Scheme to 1 per cent in relation to 2005. For renewable energies in the raw final consumption of energy, a new goal of 31 per cent has been adopted, 10 per cent of which is allocated to transport. A general goal to reduce the consumption of primary energy to 25 per cent and a specific goal for the public administration of reduction to 30 per cent has also been adopted.

Portugal approved the Green Growth Commitment (CCV), imposing certain goals to be achieved in 2020 and 2030. For 2030, the main goals are the following:

\( a \) to reduce GHG emissions between 30 and 40 per cent (52.7 to 61.5 million metric tonnes of carbon dioxide equivalent (MtCO\(_2\)) in relation to 2005;

\( b \) to increase the share of renewable energies in the final consumption of energy to 40 per cent; and

\( c \) to increase energy efficiency through a reduction of 30 per cent over the energy baseline in 2030 translated into an energetic intensity of 101 tep/MEUR GDP.

The Strategic Framework for the Climate Policy (QEPiC), approved in 2015, provides that Portugal must reduce its GHG emissions to values of -18 to -23 per cent in 2020 and to -30 to -40 per cent in 2030, compared with 2005 values, depending on the results of European negotiations.
Portugal has also created the National Action Plan for Renewable Energies (PNAER), establishing the goals regarding the share of Portugal’s energy supply from renewable sources for energy consumption in 2020, as well as the National Action Plan for Energy Efficiency (PNAEE).

Regarding energy efficiency, Portugal has implemented an energy certification system for buildings (destined for housing or commercial purposes), with the purpose of improving the energy performance of buildings and making the obtainment of energy certificates mandatory.

Additionally, through the EU 2020 funding programme, Portugal approved an Operational Programme of Sustainability and Efficiency in the Use of Resources (POSEUR), that focuses, among other issues, on available funding in order to achieve the goal to increase energy efficiency in the housing sector and to reduce the annual estimated GHG emissions, limiting, for 2023, the value of GHG emissions to 80.640T CO₂e.

The National Air Strategy (ENAR 2020) was recently approved by Resolution of the Council of Ministers 46/2016, focusing on the improvement of air quality, by protecting human health, the quality of life for citizens and ensuring the preservation of the ecosystems. It imposes the following goals:

- a compliance with the emissions and air quality goals in 2020;
- b compliance with air-quality improvement targets in 2020;
- c establishment of a plan to achieve the air-quality goals recommended by the World Health Organization in the long term; and
- d cooperation with climate policy in order to ensure that the measures concerning air pollutants and greenhouse gas emissions will benefit the air quality and climate change.

As a final note, the Paris Agreement on climate change was adopted in December 2015, and entered into force on 1 November 2016. Its central aim is to strengthen the global response to the threat of climate change by keeping a global temperature rise this century well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius. The Paris Agreement also aims to strengthen the ability of countries to deal with the impacts of climate change.

Portugal ratified the Paris Agreement on 30 September 2016.

VIII OUTLOOK AND CONCLUSIONS

We anticipate that one of the greatest challenges for Portugal will be the revision of the 2020 Urban Waste Strategic Plan (PERSU 2020) and the amendment of the current environmental legal framework in order to meet the new targets and objectives of the EU Circular Economy Action Plan. In this respect it should be highlighted that the government is also preparing a National Circular Economy Strategy.

Finally, and although this a matter that tends to be controversial considering the financial impacts for the industry and for landowners, we expect that in the short term a specific legal regime for the prevention of soil contamination and for soil remediation will be published.
Chapter 13

SPAIN

Carlos de Miguel and Bárbara Fernández

I INTRODUCTION

There are no relevant new environmental policies aside from those that come from the European Union (e.g., on energy efficiency) or international treaties (e.g., regarding climate change). This is mainly due to the existence of a caretaker Spanish government until 29 October 2016. This notwithstanding, two initiatives are worth mentioning.

When she was appointed in November 2016, the Minister of the Environment stated that her main objectives for her term in office are to pursue a law on climate change that leads to a transition to a low-carbon economy as well as the rational use of water.

Recent judgments of the Supreme Court (Nos. 154/2016 of 29 February and 966/2016 of 16 March) have clarified certain effects on criminal liability (including environmental criminal liability) of the compliance programmes within companies that were introduced by 2010 and 2015 amendments of the Criminal Code. Therefore, it is expected that the preparation and approval of these types of programmes will increase in the future.

II LEGISLATIVE FRAMEWORK

Spanish environmental law is governed primarily by the 1978 Constitution. Article 45 sets the right to enjoy an adequate environment for the development of the people, as well as the duty to preserve the environment. This Article also draws a distinction between three different areas of environmental responsibility, namely administrative, civil and criminal liability.

The mandates of the Constitution are implemented by laws and those, in turn, are complemented by regulations.

The main national environmental regulations, most of which implement EU directives, are the following:

1 Carlos de Miguel is a partner and Bárbara Fernández is an associate at Uría Ménendez.
Spain

a. Law 22/1988 on Coasts, which aims to protect the maritime-terrestrial public domain (e.g., by submitting to prior concession or authorisation certain activities and by establishing easements and limitations to the ownership of lands near to the public domain).

b. Royal Legislative Decree 1/2001 on Water, which, in a manner similar to the Law on Coasts, aims to protect the hydraulic public domain by submitting to previous concession or authorisation certain activities and by establishing easements and limitations on the ownership of lands near to this public domain.

c. Law 22/2011 on Waste and Polluted Soils, which aims to prevent the generation of waste and, when this is not possible, to minimise the adverse effects on human health and the environment deriving from waste production and treatment. This Law also has Articles specifically devoted to tackling soil pollution.

d. Law 34/2007 on Air Quality and Atmospheric Environment Protection, which aims to establish the basic rules to prevent, monitor and reduce air pollution to minimise the damage to people and the environment.

e. Law 1/2005 governing the greenhouse gas emissions trading scheme.

f. Law 27/2006 on the Right to have Access to Information, Public Participation and Access to Justice in Environmental Matters, which allows access to environmental information at the disposal of the public authorities as well as participation in the public decisions on environmental matters and the possibility of request the judicial review of public acts or omissions that may constitute environmental offences.

g. Law 16/2002 on Integrated Pollution Prevention and Control, which applies to certain industries as listed in Annex I such as certain combustion and chemical or waste management industries. It provides for a proceeding incorporating the most relevant environmental permits and other administrative steps in a single authorisation: the integrated environmental authorisation. The main aspects covered by this authorisation are air and water emissions, production and management of waste and environmental impact assessments (EIA).

h. Law 21/2013 on Environmental Assessment, which unifies under a single act the provisions related both to the environmental assessment of projects and of plans and programs. Environmental assessments are not authorisations but a prior and binding requirement to obtain a certain authorisation or to issue a certain resolution. Authorisations or resolutions are null and void if the required environmental assessment was not conducted at all or was conducted in a defective manner.

i. Law 42/2007 on Natural Heritage and Biodiversity, which establishes five basic types of protected natural spaces: parks, natural reserves, natural monuments, protected landscapes and protected marine areas, each with specific protection measures. In addition, according to European regulations and international treaties, other types of areas are protected in Spain. This is the case, for instance, for sites of community importance and special conservation areas. This Law also governs the protection of wild flora and fauna species. As a general rule, activities in any environmental protected area are restricted and only authorised when their compatibility with the environmental values is assured.

j. Law 26/2007 on Environmental Liability, which imposes the obligation to foresee, prevent and restore environmental damage in accordance with the precautionary and the polluter pays principles.
In addition to the above administrative rules, the Spanish Criminal and Civil Codes must also be taken into consideration. The Spanish Criminal Code includes a wide range of environmental offences; and the Spanish Civil Code includes general civil rules that may apply to tort, contractual liability and ownership in relation to environmental matters.

On the other hand, autonomous regions may enact laws and regulations of their own on environmental matters provided that they do not reduce the level of environmental protection established by the national rules. Also, municipalities may issue environmental regulations, which must always respect national and regional laws.

All this set of environmental rules is further complemented by international environmental treaties such as:

\[ a \] the United Nations Framework Convention on Climate Change (UNFCCC), New York 1992;
\[ b \] the Paris Agreement under the 21 Conference of the United Nations Framework Convention on Climate Change of 12 December 2015;
\[ c \] the United Nations Convention on Law of the Sea (UNCLOS), Montego Bay, 1982;
\[ d \] the International Convention for the Prevention of Pollution From Ships (MARPOL), London, 1973;
\[ e \] the Convention on Wetlands, Ramsar, 1971;
\[ f \] the Convention on the Conservation of European Wildlife and Natural Habitats, Berne, 1979;
\[ g \] the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), Washington DC, 1973;
\[ h \] the Convention for the Protection of the Mediterranean Sea Against Pollution, Barcelona, 1976; and

International treaties are binding in Spain when they are published in the Official Gazette. Unless otherwise indicated, in this chapter reference is made to national rules only.

III THE REGULATORS

As stated, powers on environmental matters in Spain are shared among the state, the autonomous regions and the municipalities as follows:

\[ a \] The state has the power to enact basic environmental legislation and to control (e.g., by granting authorisations or sanctioning) certain specific environmental areas, namely those concerning water where more than one autonomous region is affected, certain aspects of the greenhouse gas (GHG) emissions regime and certain environmental assessments. The state powers are generally executed through the Ministry of the Environment.

\[ b \] The autonomous regions may issue rules for stricter environmental protection on top of the national legislation. Also, they have the power to control most of the environmental areas, such as integrated environmental authorisations, waste or air emissions. The regional powers are exercised through bodies equivalent to state ministries.
Finally, municipalities’ environmental powers mainly relate to municipal environmental permits, urban waste, air quality and noise limits. As previously indicated, city councils must respect national and regional laws when approving their own regulations.

Administrative resolutions (whether national, regional or municipal) may be appealed, whether before the administration or before courts.

Should there be a higher administrative authority to the one that issued the administrative resolution, an administrative appeal may be filed before said higher authority. In addition, it is possible (but not compulsory) to appeal before the same authority that issued the resolution.

If there is no such higher authority, or if the administrative appeal is dismissed, a court appeal may be filed.

Courts may confirm or quash any administrative resolution. Upon request, courts may suspend the administrative resolutions challenged provided that the execution of the resolution can cause serious damage to the party and no damage to the environment or to a third party can be caused. If the suspension is granted, courts can impose guarantees to ensure the protection of the environment or the third party’s interest.

IV ENFORCEMENT

Environment offences may lead to two types of liability, namely, administrative and criminal liability. In addition, environmental liability may arise if a damage or risk of damage to the environment is caused; likewise, there may be civil liability for damages derived from environmental damages (e.g., loss of profits when a factory must be closed because its soil has been polluted by a neighbour, or health damages). In these two cases (environmental and civil liabilities) liability may arise regardless of whether or not there has been an offence of environmental rules.

Each type of liability is directed to specialised courts (i.e., administrative, criminal or civil courts). Whereas for the time being there are not specialised environmental courts, there is a national specialised environmental protection police, the Nature Protection Service.

Administrative liability consists of the failure to comply with the obligations under the administrative environmental laws. It is imposed after a sanctioning administrative procedure, which among other steps includes the right of the alleged offender to be heard. Sanctions may take the form of fines, suspension of the activity, closure of the premises or disqualification. Sanctions may be appealed as indicated in Section III, supra.

In addition to the sanctions, offenders may be obliged to restore things to their prior state. Also, Law 26/2007 on Environmental Liability, obliges operators to take measures to avoid environmental damage and, where damage has been caused, to remedy it. In this latter respect there may be overlapping with administrative rules.

Except as otherwise specified, the limitation period for environmental administrative offences is three years for very serious offences, two years for serious offences and six months for minor offences.

The Spanish Criminal Code devotes an entire section (Title XVI), plus some other Articles (e.g., Articles 343 and 345) to crimes concerning the protection of national heritage and the environment. Among other penalties, sanctions may entail imprisonment, fines or disqualification.
For an action or omission to be deemed a criminal offence, it must be proven that the defendant acted either negligently – only when the Criminal Code expressly punishes negligent commission of said crime, which is not always the case – or intentionally. Spanish case law has broadened the concept of ‘intention’ or ‘purpose’ so that it also comprises recklessness (i.e., consciously disregarding a high risk of criminal offence) and in certain cases ‘wilful blindness’ (i.e., intentionally refusing to know the circumstances of a criminal offence that is being committed within one’s area of competence, despite knowing that said criminal offence is taking place).

Legal entities may also be held criminally liable. This liability is not alternative but cumulative to that of the individuals who have committed the criminal offence.

To prevent the criminal liability of legal entities, the Criminal Code includes a specific exonerating circumstance: the establishment of compliance programmes (‘organisation and management models’). These compliance programmes must be both approved and implemented to constitute a valid exonerating circumstance.

The basic environmental crime is contained in Article 325 of the Criminal Code as follows: anyone who in breach of an environmental rule directly or indirectly causes or makes emissions, spillages, radiation, extractions or excavations, filling with earth, noises, vibrations, injections or deposits, in the atmosphere, the ground, the subsoil or the surface water, ground water or sea water, including the high seas, even those affecting cross-border spaces, as well as the water catchment basins, that solely or in conjunction with others cause or may cause substantial damage to the quality of the air, soil, water, animals or plants may be sanctioned with imprisonment of up to two years, a fine of up to 14 months and disqualification of up to two years (Article 325.1).

In the event the aforementioned conduct may cause serious damage to the balance of the natural systems, it may be sanctioned more severely with imprisonment of up to five years, a fine of up to 24 months and disqualification up to three years (Article 325.2).

Environmental liability is that briefly described in Section II, supra.

Finally, civil liability consists of restoring or indemnifying the damage caused to a third private party as a consequence of environmental damage. It is an independent liability from those mentioned above, and therefore can apply irrespective of, and in addition to, criminal liability or administrative sanctions. The general limitation period is one year for tort actions, and five years if there is a contract between the parties.

V REPORTING AND DISCLOSURE

Operators whose activities can affect the environment are usually subject to periodic monitoring and reporting obligations as contained in the applicable laws or in their permits.

For instance, integrated environmental authorisations must include periodic reporting obligations as well as the obligation to report immediately to the authorities any incident or accident that may affect the environment.

---

2 Criminal regulations calculate the total amount of the fine based on time, so a fine will be measured in days or months. According to the seriousness of the offence and the economic capacity of the offender, an amount per day will be established and the total fine will be a multiple of this and expressed in days or months.
Also, Law 21/2013 on environmental assessment includes the obligation to carry out monitoring plans, the result of which must be handed over to the authorities. Similarly, Law 26/2007 imposes on operators the obligation to immediately notify to the authorities any environmental damage or imminent threat thereof caused by them.

Failure to comply with these obligations may lead to administrative liability.

Companies have obligations on information disclosure in their financial reports as to environmental matters. Rules in this regard are set by Law 22/2015 on Account Auditing, Royal Decree 1514/2007 which enacts the General Accounting Plan or Resolution of 25 March 2002 of the Institute on Accountability and Account Auditing (ICAC). Financial statements must include a specific chapter containing environmental information, such as expenditure incurred in environmental protection, environmental risks assured and pending judicial proceedings affecting the company, contingencies or investment due to environmental reasons.

In relation to the protection for whistle-blowers, Article 62.4 of Law 39/2015 states that the authorities must exempt from administrative sanctions the first complainant participating in the commission of an offence provided that (1) the whistle-blower gives evidence of the offence that allows to confirm it or to initiate sanctioning proceedings against the rest of the offenders; (2) the authorities did not have grounds enough to initiate the sanctioning proceedings at the time of the complaint; and (3) the damage is repaired. In the event the aforementioned requirements are not fully met, the authorities must reduce the sanctions to be imposed if the whistle-blower provides evidence that implies a significant added value to the evidence that the authorities had.

In either case, protected whistle-blowers must cease their participation in the offence and must not have destroyed any evidence related to the offence.

Currently it remains unclear how the authorities and courts will apply Article 62.4. Given its ambiguous wording in relevant elements, it may be anticipated that this Article will have a limited application.

There is no similar protection for whistle-blowers regarding criminal offences.

VI ENVIRONMENTAL PROTECTION

i Air quality

Law 34/2007 on Air Quality and Atmospheric Environment Protection governs the activities considered as potentially pollutant of the atmosphere. This Law:

a identifies the polluting substances that must be subject to certain emission limits;
b imposes that certain activities must obtain a previous air emission authorisation (labelled as ‘A’ or ‘B’) or require a previous communication (labelled as ‘C’); and
c imposes additional obligations such as self-control and keeping an official registry book on air emissions.

The air emission limit values are established by the regional authorities taking into account: (1) the implementation of best available techniques or other appropriate measures to prevent air pollution, (2) technical characteristics of the installation, location and local environmental conditions, (3) air emissions’ nature, potential to transfer pollution from one medium to another and incidence for people and the environment, (4) plans or programmes regarding
air quality or gas emission reduction, and (5) air emission limit values imposed by laws and regulations or international treaties of which Spain is party (Article 5 of Royal Decree 100/2011).

Implementing rules govern specific activities or pollutants. For instance, large combustion plants are subject to certain specific conditions under Royal Decree 815/2013 on industrial emissions and in Royal Decree 430/2004 establishing new regulations on limitations of atmospheric emissions from large combustion plants.

ii Water quality
Royal Legislative Decree 1/2001 on Water governs fresh water and its associated land (the hydraulic public domain). Under this rule, the use of water for private purposes is subject to obtaining a concession granted by the Basin Authority. Other activities such as the use of the river bed, or the discharge of wastewater, require an authorisation also granted by the Basin Authority.

Law 22/1988 on Coasts, which governs seawater and its associated land (the maritime-terrestrial public domain), follows a similar structure. Thus, the use of, occupation of or works on, the maritime-terrestrial public domain are subject to authorisation or concession. Also, discharges from land into the sea require previous authorisation. Law 22/1988 is completed by Law 41/2010 on the protection of the maritime environment that governs the planning, conservation, protection and improvement of the environmental status of the maritime environment.

To better protect both hydraulic and maritime-terrestrial public domain, easements and limitations are imposed on the ownership of adjacent plots.

Also, planning is key for achieving an appropriate level of protection:

a Regarding hydraulic public domain, each basin has its own plans aimed to, *inter alia*, achieve good water conditions and adequately protect the water resources, satisfy water demands, achieve a balanced and harmonised regional and sectorial development, increase the availability of the resource, protect its quality and reduce the cost of its use.

b Regarding the maritime-terrestrial public domain, Law 41/2010 on the protection of the maritime environment, sets out the obligation to draft specific strategic plans for each maritime area (Atlantic or Mediterranean).

Furthermore, granting intake concessions or discharge authorisation from the hydraulic public domain is based on the environmental status of the medium and the compatibility between the water intake or discharge and environmental sustainability. In order to determine both, the content of the specific basin plan applicable is key.

Regarding water discharges, as it is difficult to determine some unique maximum limits of general applicability, the discharge limit values applicable are set out in accordance with the specific circumstances at stake. Among those circumstances to be considered is the content of the specific plan applicable, which usually includes maximum discharge limit values or quality objectives, as well as the specific characteristics of the discharge to be authorised (e.g., location, pollutants or quantity).

Similar considerations are applicable when granting discharge authorisations to the maritime public domain. Based on the quality objectives applicable and the specific
characteristics of the discharge, applications for discharges into maritime public domain authorisations may be rejected or limited to guarantee that no significant environmental alteration is caused (Article 57.3 Law 22/1988).

iii Chemicals
The main Spanish provisions on chemicals, as most of the environmental legislation in Spain, come from EU rules. Indeed, one of the outstanding rules on chemicals is the EU Regulation 1907/2006 on Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH). This Regulation sets out specific duties and obligations (e.g., registration of substances and uses with the European Chemicals Agency) on manufacturers, importers and downstream users of substances on their own, in preparations and in articles. In addition, EU Regulation 1272/2008 governs the classification, labelling and packaging of chemical substances and preparations.


Furthermore, Royal Decree 840/2015 on risk control for serious accidents where hazardous substances are involved, requires notification for the installation of activities that use certain hazardous substances and subjects those installations to several preventive conditions, such as the preparation of preventive policy plans, security reports or emergency plans. Depending on the existing quantity of dangerous substances, the facilities are classified as low or high-risk facilities. High-risk facilities are subject to stricter obligations and requirements.

iv Solid and hazardous waste
Law 22/2011 defines waste as any substance that the possessor disposes of or has the intention or obligation to do so. The Law includes definitions of different types of waste such as hazardous, domestic, commercial, industrial or bio-waste.

Hazardous waste is that which has a hazardous characteristic as listed in Annex III of the Law and is considered as such by the EU, national or regional regulations. The treatment of hazardous waste is subject to specific authorisations and must meet special conditions of storage, labelling and packaging as well as documentary obligations. In addition, the production of hazardous waste is subject to prior communication to the authorities or registration within the Hazardous Waste Small Producers Public Registry. Financial guarantees may be requested.

The collection of domestic waste is entrusted to the municipalities (non-hazardous commercial waste may also be so), while producers of industrial waste have the obligation to hand it over to authorised waste managers and keep record of its proper delivery. Waste managers must obtain a previous authorisation and have financial guarantees.

Certain types of waste are also subject to specific regulations. This is the case, among other things, of waste packages governed by Law 11/1997 and Royal Decree 782/1998, waste from electrical and electronic equipment governed by Royal Decree 110/2015, construction and demolition waste governed by Royal Decree 105/2008, oil waste governed by Royal Decree 679/2006 or waste batteries governed by Royal Decree 106/2008.

Also, Spanish waste legislation includes the extended producer responsibility (i.e., the responsibility of the manufacturer of a product for its entire life cycle, and especially for its
take-back, recycling and final disposal). Manufacturers may comply with these obligations on their own or collectively by means of an integrated management system, an organisation that assumes said obligations on behalf of all the adhering parties.

v Contaminated land

Law 22/2011 on waste and polluted soils, and Royal Decree 9/2005 on the creation of a list of potentially land pollutant activities and the criteria to declare polluted soils, are the main rules governing soil pollution.

Operators: (1) of activities included in the list of potentially soil-polluting activities under Royal Decree 9/2005, (2) that produce, handle or store more than 10 tons per year of certain substances such as hazardous substances, or (3) that have a fuel tank for private use with an average annual consumption higher than 300,000 litres and a total storage volume of 50,000 litres or higher, had to file a preliminary soil report before 7 February 2007.

Thereafter, in view of the content of this report, the authorities might request more detailed information.

Operators then must update the soil report periodically before the regional authorities – the regularity of this update is determined by each autonomous region – and, in any case, when installing, enlarging or closing the activity. Likewise, owners must prepare a soil report when changing the use of the land or applying for a permit for a different activity.

In addition, owners of soils in which potential soil-polluting activities are or have been carried out must disclose this circumstance in the public deed of transfer of rights over the soil in question.

As a general rule regional authorities are the ones with the power to declare a soil as polluted. For this purpose, risk for human health or the environment taking into account the specific use of the land must exist. The criteria to be considered for this declaration are set forth by Royal Decree 9/2005, which differentiates among industrial, urban or other uses of the land.

The persons obliged to clean-up the site – in the manner imposed by the authorities – are, in this order, the polluter, the owner of the polluted site and the possessor thereof.

The declaration of soil as polluted must be included within the Property Registry and can only be removed when the regional authorities confirm that the clean-up has been duly carried out and that, therefore, there is no unacceptable risk to human health or the environment.

VII CLIMATE CHANGE

Spain is a signatory party of the 1992 United Nations Framework Convention on Climate Change (UNFCCC) which entered into force on 21 March 1994. In addition, on 22 April 2016 Spain signed the Paris Agreement resulting from the Paris Climate Conference (COP21) that sets out a global action plan to avoid dangerous climate change. The Paris Agreement entered into force on 4 November 2016.

The Ministry of the Environment is the administrative body that, at a national level, is responsible for implementation and administration of climate change policies. Within that Ministry, certain subsidiary administrative bodies have been created with different responsibilities, such as the Spanish Climate Change Office, in charge of shaping the national climate change policy; the National Climate Commission, in charge of issuing recommendations in relation to climate change-related plans, programmes and lines of action;
and the Climate Change Policies Coordination Committee, in charge of the coordination between the national and the regional authorities in this area. In addition, the autonomous regions have created specific bodies to implement policies on climate change within the scope of their powers.

The EU has approved several regulations on climate change with the aim of obtaining a reduction of the GHG emissions of the member states in an effective and efficient manner. One of the most important measures has been the implementation of a emissions trading system (ETS) that aims to reduce GHG by means of setting a cap on the total amount that can be emitted by certain installations, a cap that is reduced over time so that total emissions decrease.

EU Directive 2003/87/EC (as subsequently amended) establishes a scheme for greenhouse gas emission allowance trading. This Directive has been implemented in Spain by means of Law 1/2005 (also amended several times to implement the amendments to the Directive), which applies to facilities included in Annex I that generate certain GHG emissions, and to certain aviation activities with origin or destiny within the European Economic Area (EEA). The existing trading period started on 1 January 2013 and will end on 31 December 2020. Thereafter successive eight-year periods will follow.

Facilities under Law 1/2005 must obtain a specific authorisation for emitting GHG, unless the facility is considered a small-scale installation. Regional authorities are the ones with the power to issue this authorisation. Any change in the nature, operating procedures, size of the facilities or any other change entailing a significant enlargement or reduction to the capacity of the facilities, as well as any change affecting the identity or domicile of the operator, must be notified.

Operators subject to Law 1/2005 must have an emission allowance per each equivalent tonne of carbon dioxide emitted from its facility (or aircraft). Emission allowances are transferrable and registered within an ETS Registry.

Although it is envisaged that the auction becomes the main method for the allocation of emissions allowances, free allocation allowances may be requested to the Council of Ministers in certain cases.

In this regard, facilities included in sectors exposed to a significant risk of ‘carbon leaks’ will be granted 100 per cent free allocations.

Others sectors that do not pose a significant risk of ‘carbon leaks’ may also receive free allocations up to a maximum of 80 per cent, percentage that will gradually decrease with the aim of reaching 30 per cent in 2020 – the rest of allowances needed must be acquired in the auctions. These free allocations for sectors without risk of ‘carbon leaks’ are meant to disappear in 2027.

Power generators and capture, transportation and geological storage of carbon installations do not receive any free allowances, except certain high-efficiency cogeneration and urban heating and certain waste gases combustion power generators.

Aviation is also subject to free allocation of allowances as only 15 per cent of the total amount of allowances is subject to auction.

Activities emitting GHG must send the regional authorities, before 28 February every year, a verified report on GHG emissions of the previous year. This report will be assessed by the authorities to verify (among other circumstances) that the operator has obtained all the required GHG emission allowances.
Also, aviation operators must have a monitoring plan that includes certain measures to monitor and notify the data of their yearly emissions and tonne-kilometres transported. This monitoring plan must be approved by the Ministry of the Environment.

In addition to Law 1/2005, other national rules on climate change are worth mentioning:

\[ a \] Law 40/2010 on the geological storage of carbon dioxide;
\[ b \] Royal Decree 1722/2012 implementing certain aspects relating to the assignment of emissions allowances within the framework of Law 1/2005;
\[ c \] several regulations on energy efficiency such as Royal Decree 235/2013 on the basic procedure for the energy efficiency certification of buildings;
\[ d \] Royal Decree 163/2014 on the carbon footprint, offset and carbon dioxide absorption projects registry;
\[ e \] Royal Decree 56/2016 on energy efficiency relating to energy audits, accreditation of providers of energy services and auditors, and promotion of the efficiency of energy supply; and
\[ f \] several regulations on clean energy such as Royal Decree 413/2014 on the production of electricity from renewable energy sources, cogeneration and waste. There is a National Action Plan on Renewable Energy Sources 2011–2020, which aims to achieve that 20 per cent of the total energy consumption from renewable energy sources in 2020 (EU Directive 2009/28/EC).

**VIII OUTLOOK AND CONCLUSIONS**

Spain is aligned with the rest of the European countries in environment-related issues both in terms of legislation and enforcement. There is a complete set of environmental legislation that covers a wide range of environmental areas with a reasonable level of enforcement.
I INTRODUCTION

This review outlines the legislation and regulatory regimes in the United Kingdom related to the environment and climate change. It is primarily focused on the law of England and Wales, with reference to Scotland and Northern Ireland where appropriate.

The UK is involved in several major environmental and climate change initiatives at national, European Union regional and international levels (such as its participation in the EU emissions trading scheme (EU ETS)\(^2\) and the recent Paris Agreement under the United Nations Framework Convention on Climate Change\(^3\) as well as various decarbonisation initiatives. Recently, the government instigated a review of environmental regulation to limit bureaucracy and reduce costs as part of the Cutting Red Tape process.\(^4\) The results of the reviews of both the waste and recycling sector and the energy sector were published in March 2016.\(^5\)

---

1 Tallat S Hussain is environmental counsel at White & Case LLP. The author was assisted by Alex Field, a trainee solicitor at White & Case LLP.
3 The Paris Agreement under the United Nations Framework Convention on Climate Change (UNFCC) was adopted on 12 December 2015 and entered into force on 4 November 2016 http://unfccc.int/paris_agreement/items/9485.php.
4 https://cutting-red-tape.cabinetoffice.gov.uk/.
Additionally, the UK environmental permitting regime is the subject of an ongoing review to consolidate the various amendments made since its introduction in 2010. Draft new environmental permitting regulations have been released, and these are expected to come into force at the beginning of 2017.6

Actions relating to air quality issues include a consultation on the implementation of Clean Air Zones in five cities across England: Birmingham, Derby, Leeds, Nottingham and Southampton. The zones define areas for targeted action to improve air quality, particularly with regards to nitrogen dioxide (NO₂) and particulate matter emissions, by encouraging the transition to a low-emission economy and placing access restrictions on more polluting vehicles.7

With the launch of the Green Investment Bank (GIB) in 2012, the UK was the first country in the world to create a bank dedicated to the green economy.8 In March 2016 the government began the process of privatising GIB, although it is intended that a ‘special share’ will be retained by the government to ensure that the green mission of GIB is protected.9

Certain initiatives in the UK have, however, been less successful. For instance, the government withdrew funding from the £1 billion Carbon Capture and Storage Commercialisation Competition in 2015. Materially impacted the White Rose Carbon Capture Storage project, one of the two bidders brought forward to the planning and design stage, casting doubt on the future financing of carbon capture and storage projects in the UK.10

On 23 June 2016 the UK voted to exit the EU (referred to as ‘Brexit’). Depending on the form that Brexit takes, it is likely to have an effect on the UK’s environmental legislation, although this is not expected in the short term, as discussed further below.

II LEGISLATIVE FRAMEWORK

The current legislative framework for environmental and climate change regulation in the UK is composed of a mixture of domestic and EU law. In many areas, UK regulation derives primarily from the EU; however, the UK has long had its own environmental laws, and the regimes for certain important areas such as contaminated land are solely domestic.

EU environmental law will continue to apply for as long as the UK is part of the EU, and likely, at least initially, following Brexit. However, depending on the form of new trading arrangements agreed between the UK and the EU, some of this legislation may be impacted, even though the UK has adopted most EU environmental directives into national law.

Certain regimes that implement EU legislation may need to be rewritten in order to incorporate the standards directly into UK law. For example, the UK regime for regulating industrial emissions as currently written refers to compliance with the EU Industrial Emissions Directive,11 as opposed to referring to standards contained within UK legislation. The UK

---

11 Industrial Emissions Directive 2010/75/EU.
will continue to be bound by any international treaties or conventions to which it is a party in its own right alongside the EU, such as the United Nations Framework Convention on Climate Change, the Kyoto Protocol and the Paris Agreement, even if it is no longer bound by any EU legislation implementing the results of those treaties.

Much of UK environmental legislation is specific to a particular area of environmental law. Some examples of important legislation, discussed in greater depth below, include:

\( a \) the Environmental Permitting Regulations 2010, which set out the environmental permitting system;

\( b \) the Environmental Protection Act 1990, which regulates contaminated land and waste;

\( c \) the Environment Act 1995, which regulates ambient air quality;

\( d \) the Industrial Emissions Directive 2010, which regulates industrial emissions;

\( e \) the Water Resources Act 1991, which regulates discharges to water;

\( f \) the Water Industry Act 1991, which regulates discharges to sewers;

\( g \) the REACH Enforcement Regulations 2008, which regulate chemicals;

\( h \) the Waste Regulations 2011 and Hazardous Waste Regulations 2005, which regulate solid and hazardous waste; and

\( i \) the Climate Change Act 2008, which sets legally binding targets for emissions reduction.

III THE REGULATORS

The primary regulatory agencies enforcing environmental and climate change rules in the different areas of the United Kingdom are:

\( a \) the Environment Agency (EA) in England;\(^{12}\)

\( b \) Natural Resources Wales (NRW) in Wales;\(^{13}\)

\( c \) the Scottish Environment Protection Agency (SEPA) in Scotland;\(^{14}\) and

\( d \) the Northern Ireland Environment Agency (NIEA) in Northern Ireland.\(^{15}\)

These agencies are responsible for the regulation of major industry and waste management, the treatment of contaminated land, water quality and natural resources. They also regulate fisheries, navigation of harbours, estuaries and inland rivers, and are responsible for managing flood risks and issues of conservation and ecology.\(^{16}\) Numerous other bodies also play a role, including:

\( a \) the Department of Environment, Food and Rural Affairs (Defra), the central government department responsible for environmental protection policy in England and internationally on behalf of the United Kingdom in the EU and elsewhere;


\(^{13}\) https://naturalresources.wales/.

\(^{14}\) www.sepa.org.uk.

\(^{15}\) www.doeni.gov.uk.

\(^{16}\) Note: the NIEA is also responsible for the preservation of the built environment in Northern Ireland, fulfilling a similar role to organisations such as English Heritage.
b the Department for Business, Energy and Industrial Strategy (BEIS), the central government department responsible for climate change having taken over the functions of the former Departments for Energy and Climate Change (DECC) and for Business, Industry and Skills (BIS);

c the Scottish government, Welsh government and Northern Irish executive, which each have devolved responsibilities for environmental policy and legislation in their respective countries;

d Natural England, which has responsibility for biodiversity, wildlife and habitats in England;

e the Marine Management Organisation, with responsibility for marine activities and the marine environment throughout the UK; and

f the Health and Safety Executive, whose remit includes industrial safety, chemicals and asbestos management.

The regulatory agencies are overseen by their respective government body (e.g., Defra in England or the devolved governments in Wales, Scotland and Northern Ireland).

Certain environmental responsibilities are within the remit of local authorities, including the collection and disposal of municipal waste and the regulation of emissions from smaller industrial plants within their local area to air, water and land. Notably, local authorities play a key role in relation to contaminated land, as laid out under Part IIA of the Environmental Protection Act 1990,17 except where the land is a ‘special site’ regulated by the EA or its equivalent. Special sites include sites that have a serious impact on controlled waters or sites contaminated by radioactivity.18

Courts in the UK play a key role in the enforcement of environmental regulation, serving as the venue for criminal prosecutions and civil actions to which they have generally adopted a robust approach. For instance in Lungowe v. Vedanta Resources plc,19 the courts were willing to allow Zambian citizens to bring claims against an English parent company for personal injury and damage to property allegedly caused by pollution from a copper mine owned by a Zambian subsidiary. This case builds on the earlier example of Chandler v. Cape plc,20 where the Court of Appeal upheld the decision of the first instance judge to allow the employees of a subsidiary to bring a claim in negligence against the parent company regarding their exposure to asbestos. In this case, the courts determined that the UK parent company had a duty of care to employees of a subsidiary where the parent possesses higher knowledge of the source of the injury (in this case asbestosis for which the company had established environmental, health and safety (EHS) policies and also disseminated EHS procedures to subsidiaries).

Environmental groups and other NGOs have also made use of the courts as a means of influencing environmental law and policy, both by bringing claims for judicial review against the actions of public authorities and by seeking to stop the activities of large companies where

17 Environmental Protection Act 1990 c. 43.
18 Regulation 2 Contaminated Land (England) Regulations 2006/1380.
these may be detrimental to the environment. For example, a series of challenges have been made against the government’s air quality plans, forcing new plans to be produced in 2015\textsuperscript{21} and for these new plans to be reconsidered in 2016.\textsuperscript{22}

NGOs have also contested the granting of planning consents, such as the legal challenge by Friends of the Earth and Frack Free Ryedale in 2016 against the granting of permission for hydraulic fracturing for shale gas in Ryedale, North Yorkshire.\textsuperscript{23}

As a Member State, the UK is subject to the jurisdiction of the EU courts, and as such the European Court of Justice also plays a role in enforcing environmental legislation. For example in the \textit{Welsh NOx} case,\textsuperscript{24} the UK was held to have failed to correctly apply the provisions of the Large Combustion Plant Directive\textsuperscript{25} to the Aberthaw Power Station in Wales by allowing the power station to burn highly volatile fuels resulting in emissions of nitrous oxides (NOx) above the levels permitted, even though Aberthaw already benefited from a derogation allowing higher NOx emissions than usual for a power station of its type.

IV ENFORCEMENT

There are various bases for environmental liability in the UK, including criminal law, civil law, public law and company law.

i Criminal law

The primary method of enforcement for most environmental laws is criminal prosecution by the regulator (e.g., the Environment Agency in England and Wales) for breach of environmental legislation. Sanctions include fines and imprisonment, and extend liability to corporate entities as well as individuals. As a result of amendments to the Legal Aid, Sentencing and Punishment of Offenders Act 2012\textsuperscript{26} the maximum fines for environmental offences in both the lower and higher courts are now unlimited. Prior to 12 March 2015 the maximum fine in the lower courts for environmental offences was £50,000. Legislation is in place to increase the maximum sentence in the lower courts from six to 12 months, however, as of yet it has not entered into force.

New sentencing guidelines for environmental crimes published in 2014 have established increasing starting points for sentences based on the size of the company at fault, from micro companies to small, medium and large companies. These guidelines were first applied in the case of \textit{R v. Thames Water Utilities Ltd}.\textsuperscript{27} Following criminal prosecution by the Environment Agency, Thames Water was fined £250,000 for the negligent discharge of untreated sewage into a stream that flowed through an ‘area of outstanding natural beauty’.

\textsuperscript{21} \textit{R (ClientEarth) v. The Secretary of State for the Environment, Food and Rural Affairs} [2015] UKSC 28.
\textsuperscript{22} \textit{ClientEarth v. The Secretary of State for the Environment, Food and Rural Affairs} [2016] EWHC 2740 (Admin).
\textsuperscript{23} Note: the case for judicial review was heard in the High Court on 22–23 November, and the judgment is yet to be released.
\textsuperscript{24} \textit{Commission v. United Kingdom} [2017] Env. L.R. 6.
\textsuperscript{25} Large Combustion Plant Directive 2001/80/EC.
\textsuperscript{26} Section 85 Legal Aid, Sentencing and Punishment of Offenders Act 2012 c. 10.
\textsuperscript{27} \textit{R v. Thames Water Utilities Limited} [2015] EWCA Crim 960.
This fine was upheld on appeal, with the court stating that they ‘would have had no hesitation in upholding a very substantially higher fine’.\footnote{Ibid. Mitting J at para 46.} The court compared the guidelines to those in relation to breaches of financial services regulation, holding that fines for harm caused by deliberate action or inaction could be imposed up to a ‘substantial percentage’ (i.e., up to and including 100 per cent) of a company’s pre-tax net profit for the year. In general, the approach of the guidelines is for a repeated negligent offender to receive a fine large enough to ‘bring the message home’ to the directors and shareholders of the offending company.\footnote{Ibid. Mitting J at paras 38-42.}

Subsequent sentences have included a £1 million fine for Thames Water for polluting the Grand Union Canal,\footnote{www.gov.uk/government/news/thames-water-fined-1-million-for-pollution-to-grand-union-canal.} a £1.1 million fine for Yorkshire Water for illegally discharging sewage into the River Ouse,\footnote{www.gov.uk/government/news/yorkshire-water-fined-11million-for-illegal-sewage-discharge.} and a combined fine of almost £1 million for United Utilities Water Limited and its contractor KMI+ for polluting a stream with bleach.\footnote{www.gov.uk/government/news/united-utilities-and-contractors-fined-almost-1m-for-polluting-brook-with-corrosive-bleach.} A record custodial sentence for environmental crime of seven years and six months has also recently been awarded in relation to a £2.2 million fraud by a waste operator who falsely claimed to have collected and recycled significant quantities of household electrical waste.\footnote{www.gov.uk/government/news/leeds-businessman-receives-record-jail-sentence-over-22m-recycling-fraud.}

### ii Civil law

Private persons may also bring civil law claims in relation to the harms caused by breaches of environmental law. These are typically claims for damages or an injunction under the common law of nuisance, the rule in *Rylands v. Fletcher* or the common law of negligence, with a nuisance claim generally considered to have the highest chance of success.

Private nuisance requires the defendant’s activities to have caused substantial and unreasonable damage to neighbouring land, the damage to be reasonably foreseeable and the activity to be unreasonable, even if it is lawful.\footnote{Bamford v. Turnley (1860) 122 ER 25; Cambridge Water Co Ltd v. Eastern Counties Leather plc [1994] 1 All ER 53.} The creator of the nuisance may remain liable even if they have subsequently disposed of the land, and a new owner who is aware of the nuisance but does not attempt to abate it may also be liable.

The rule in *Rylands v. Fletcher*\footnote{Rylands v. Fletcher [1868] UKHL 1.} creates liability where the defendant brings onto land, collects or keeps on it something that is likely to cause damage if it escapes, provided that the damage is reasonably foreseeable and the defendant’s activities on the land are ‘non-natural’ (e.g., industrial activity).

The threshold for bringing a claim for negligence requires that the defendant (who may have either caused the contamination or allowed it to continue) owed a duty of care to the claimant, that the duty was breached, and that the claimant suffered loss or damage.
as a result of that breach. It is a defence to negligence to show that the defendant exercised reasonable care in carrying out their activities. Such a defence does not apply to nuisance or *Rylands v. Fletcher*, where it is sufficient that the environmental damage occurred.

### iii Public law

Under the Regulatory Enforcement and Sanctions Act 2008, environmental regulators have the power to impose civil sanctions as an alternative to prosecution in relation to certain environmental breaches. Civil sanctions include fixed monetary penalties, discretionary requirements, stop notices and enforcement undertakings.

Enforcement undertakings involve the offender making an offer to perform some act or to pay money to restore or remediate any harm caused by their breach of environmental legislation. Enforcement undertakings are the most common sanction, and since 2015 their usage by the Environment Agency in England has been extended to include breaches under the environmental permitting regime (as discussed below).

Civil sanctions may also be imposed under other environmental legislation, including in relation to the EU Emissions Trading Scheme (as discussed below).

### iv Company law

Under the Companies Act 2006, directors are subject to a statutory duty to promote the success of the company for the benefit of its members as a whole. In doing so the directors must take into account, among other factors, the impact of the company’s operations on the community and environment. A director in breach of this duty could be subject to a derivative action by the shareholders on behalf of the company even if that director has not itself benefited from the breach. However, such an action is considered to be difficult given the requirement to prove subjective bad faith on the part of the director, and the general discretion given to directors to balance competing interests. Furthermore the courts in the UK are generally unwilling to interfere in the business decisions of a company.

### V REPORTING AND DISCLOSURE

#### i Reporting and disclosure

There are several mechanisms by which companies may be required to report on or disclose environmental issues.

It is common for environmental permits (as discussed under Environmental Protection below) to include reporting conditions in relation to discharges to water, air emissions and other operational matters, and a number of environmental regimes impose further reporting requirements.

In addition, under the Environmental Damage (Prevention and Remediation) (England) Regulations 2015 operators are required to notify the relevant regulator of any imminent threats of environmental damage or any activity which has caused environmental damage, and to provide information to regulators upon request. The regulators themselves have wide powers to conduct investigations. For example, the EA is entitled to require that

---


37 Section 172 Companies Act 2006; note that the Companies Act applies to all UK companies.
certain information is provided, gain access to premises, obtain samples, interview site employees and carry out emergency works. However, the EA must notify the operator in advance of entering a site, and cannot generally use information provided under compulsion in the prosecution of an offence.

Companies may also be required to disclose environmental liabilities as part of their strategic report under the Companies Act 2006. At present, all companies except certain small companies are required to produce a strategic report setting out a fair review of the company’s business and a description of the principal risks and uncertainties it faces. This is a stand-alone document, and is separate from the directors’ report. However, the extent of environmental reporting varies. Large unquoted companies must consider environmental issues as a non-financial key performance indicator in their analysis of the company, but their obligations extend no further. The requirements for large or medium quoted companies are more extensive. They must report on environmental matters specifically, including the impact of the company’s business on the environment, the company’s environmental policies and the effectiveness of those policies. Small companies and medium unquoted companies are not subject to any environmental reporting requirements.


It is noteworthy that in the context of an acquisition, there are no specific legal requirements for a seller to disclose environmental issues to a purchaser. Nevertheless, environmental due diligence is likely to form part of the acquisition process and is part of market practice, given the potential liabilities faced by the purchaser. Lenders and insurers may also be the impetus for due diligence. Environmental due diligence may include environmental site condition reports in the form of desktop, phase 1 or phase 2 assessments, depending on the level of environmental issues identified, the environmental warranties and environmental indemnities for losses incurred by the purchaser as a result of the seller’s breaches of environmental requirements.

Whistle-blowers
Whistle-blowers in England and Wales are protected under the Public Interest Disclosure Act 1998, both in relation to any unfair dismissal of the whistle-blower for making a protected disclosure and in relation to any unlawful detriment suffered by the whistle-blower as a result. The potential liability to the employer is extensive, as there is no upper limit on compensation for unfair dismissal of a whistle-blower and the employer may be vicariously liable for the acts of its employees in causing detriment to the whistle-blower where it does not take all reasonable steps to prevent this.

---

38 Directive 2014/95/EU as regards disclosure of non-financial and diversity information by certain large undertakings.

39 Public Interest Disclosure Act 1998 c. 23.
The application of whistle-blower protections to environmental issues is considered explicitly in the Act, and disclosures of environmental issues may be protected on several fronts. The legislation applies to disclosures which tend to show the current, future or past occurrence of a criminal offence or a breach of legal obligation, both of which may apply to breaches of environmental regulation. It also applies specifically to disclosures which tend to show that damage to the environment has occurred, is occurring or is likely to occur in the future.\(^\text{40}\)

The Act legislation has been enforced in relation to environmental whistle-blowers on multiple occasions, including where the subject of the protected disclosure was a previous employer, highlighting the importance to companies both of maintaining an adequate whistle-blower policy and avoiding breaches of environmental regulation.\(^\text{41}\)

VI ENVIRONMENTAL PROTECTION

i Environmental permits

Environmental permits in England and Wales are dealt with through the integrated environmental permitting (EP) regime, which has steadily incorporated and replaced the various distinct permitting systems that were previously in place. The Environment Agency, Natural Resources Wales and, in certain cases, local authorities have the authority to issue permits in relation to a range of regulated activities, and an operator must hold a permit in order to carry on any regulated activity.

The integrated EP regime was initially established in April 2008, combining the pre-existing Pollution Prevention and Control regime permits and waste management licences into a new system of environmental permits. From April 2010 the EP regime has also incorporated water discharge, groundwater discharge and radioactive substances registration and authorisation, with pre-existing consents converted automatically into environmental permits.

The current regulations for the EP regime are found in the Environmental Permitting (England and Wales) Regulations 2010.\(^\text{42}\) However, in October 2016 the government published the Draft Environmental Permitting (England and Wales) Regulations 2016 with the intent of consolidating the various amendments and regulations already in place. These new regulations are expected to come into force from 1 January 2017.

The Water Act 2014\(^\text{43}\) introduced a right for the Secretary of State in England and the Welsh Ministers to extend the EP regime to include water abstraction, water impounding, fish pass approvals and flood defence consents, with a further update in 2016 to incorporate flood risk activities.

\(^{40}\) Ibid. Section 1.
\(^{42}\) Environmental Permitting (England and Wales) Regulations 2010/675.
\(^{43}\) Water Act 2014 c. 21.
Further amendments to the EP regime were made in 2013 pursuant to the Industrial Emissions Directive,\(^{44}\) which consolidated various earlier EU directives, and in 2015 pursuant to the Energy Efficiency Directive.\(^{45}\)

As such, the integrated EP regime now covers a wide range of key activities, including:

\(a\) various industrial and power generation activities and installations specified in Schedule 1 to the Environmental Permitting Regulations;

\(b\) waste operations, including mining waste operations;

\(c\) mobile plant used in connection with a Schedule 1 activity or waste operations;

\(d\) water discharge activities;

\(e\) groundwater activity;

\(f\) solvent emission activity;

\(g\) radioactive substance activities;

\(h\) flood risk activities; and

\(i\) small waste incineration plants.

The level of regulation applied under the environmental permit varies depending on the activity in question. Those activities which cause the most pollution are regulated in terms of all their emissions and energy efficiency, whereas lesser polluting activities may only see their air emissions regulated. A single environmental permit may be issued for multiple installations on a particular site, potentially reducing the burden on those carrying out multiple regulated activities. In addition, standard permits with standard conditions exist for a number of less-polluting waste activities, with scope to extend these permits to other industries in the future, and certain low-level waste management activities are fully exempted, subject to compliance with registration and notice obligations.

Environmental permits do not have a fixed expiry date, and are subject to periodic review by the regulator. The regulator may suspend permits if there is a risk of serious pollution, or may revoke the permit where ‘appropriate circumstances’ exist. In most circumstances environmental permits may only be transferred to a new operator by joint application to the regulator, and the surrender of many environmental permits also requires application to the regulator. This enables the regulator to ensure that appropriate environmental standards will be maintained either by a new operator or after the activity has ceased.

\(\text{ii} \quad \text{Air quality}\)

There are two main forms of regulation relating to air quality. Ambient air-quality regulation focuses on limiting the concentrations of specific pollutants in ambient air, whereas point source pollution regulation focuses on limiting the emissions to air of certain pollutants, primarily from industrial installations. Other methods used in the UK to regulate air quality include: substance bans, such as the ban on chlorofluorocarbons; emissions trading under the EU Emissions Trading Scheme; and taxation, such as the Climate Change Levy.

\(^{44}\) Industrial Emissions Directive 2010/75/EU.

\(^{45}\) Energy Efficiency Directive 2012/27/EU.
Ambient air quality

Regulation of ambient air quality derives from three key sources: the UK National Air Quality Strategy (NAQS), the local air quality management (LAQM) system in England and Wales and the EU Air Quality Directive 2008.

The NAQS, a requirement of the Environment Act 1995, establishes a framework for improving ambient air quality across the UK, sets standards and objectives for a number of key pollutants and explains the various measures in place to achieve those objectives. The standards set are aimed primarily at improving human health; however, the objectives in relation to nitrogen dioxide and sulphur dioxide are also set with regards to the protection of vegetation and ecosystems.

The Environment Act 1995 also sets out the LAQM system, which requires local authorities to review local air standards, and to assess whether the standards specified in the NAQS are being met. If not, the local authorities are required both to designate air quality management areas and to prepare and implement remedial action plans. However, the obligation on local authorities is limited to acting ‘in pursuit of the achievement’ of the relevant air quality standards, as much air pollution regulation and enforcement lies outside their control.

The Air Quality Directive 2008, implemented into English law by the Air Quality Standards Regulations 2010 and Air Quality Standards (Amendment) Regulations 2016, sets obligatory limit values and non-obligatory target values for a range of air pollutants similar to the NAQS, and also requires the government to produce air quality plans setting out measures for meeting the required standards and action plans in the event that certain alert thresholds are breached. The regulations also incorporate the Fourth Daughter Directive, which sets minimal target values for certain carcinogenic pollutants. The UK’s air quality plans were successfully challenged by ClientEarth in both 2015 and 2016, and as such the UK must produce new air quality plans by 31 July 2017.

Point source pollution

Emissions from industrial installations and mobile plant are regulated primarily under the Industrial Emissions Directive 2010, which replaced the former Integrated Pollution Prevention and Control (IPPC) regime, as well as the Medium Combustion Plant Directive 2015. These directives have been implemented into UK law via the EP Regulations, and as such an environmental permit is necessary in relation to activities falling within their scope.

In November 2016 the government consulted on proposals to introduce additional controls on NOx emissions from diesel generators, including requiring an environmental permit from 2019 and imposing emission limits. There are various further specific regimes

---

47 Ibid.
48 Air Quality Directive 2008/50/EC.
49 Air Quality Standards Regulations 2010/1001.
50 Air Quality Standards (Amendment) Regulations 2016/1184.
51 Fourth Daughter Directive 96/62/EC.
52 See notes 21 and 22 above.
53 Industrial Emissions Directive 2010/75/EU.
54 Medium Combustion Plant Directive 2015/2193/EU.
relating to greenhouse gas emissions, volatile organic compounds, petrol vapour recovery controls, ozone-depleting substances, fluorinated greenhouse gases, vehicle emissions, shipping emissions and aviation emissions.55

The Clean Air Act 199356 also imposes restrictions on point source pollution, enabling local authorities to designate smoke control areas57 and making it an offence to emit ‘dark smoke’ from industrial or trade premises. The Clean Air Act is currently under review as part of the Red Tape Challenge.

iii Water quality

Discharges to water

Water pollution in England and Wales is regulated under the Water Resources Act 1991,58 which applies to all ‘controlled waters’ including territorial waters, coastal waters, inland freshwaters and groundwater. A discharge to water may require various different consents, depending on: the type of activity creating the discharge; the substances in the discharge; whether the discharge is to groundwater, surface water or into a sewer; and whether the discharge occurs as part of some wider industrial activity.

Most discharges to surface water are regulated under Schedule 21 of the EP Regulations, while most discharges to groundwater are regulated under Schedule 22. In each case an environmental permit will be required where the discharge falls within the scope of the EP regime.

Discharges of trade effluents to sewers are instead subject to the Water Industry Act 1991,59 and require the operator to obtain a trade effluent discharge consent from the relevant sewerage company. The sewerage company itself will require an environmental permit to discharge the waste from its sewers into water, as discussed above.

Any facility regulated under some other branch of the EP regime is likely to include some form of discharge to water or sewers. In such cases the environmental permit granted to the facility is likely to include conditions governing any discharges, for example by monitoring the discharges which occur or minimising the emission of particular substances.

However, certain industries require a specific permit for their discharges to water pursuant to the Priority Substances Directive 2008.60 These include the paper, textiles and food industries, with the requirement of a separate environmental permit triggered upon the concentration of certain hazardous substances released to water exceeding the relevant level specified in the EP Regulations. A separate trade effluent discharge consent would also be required for the discharge of these substances into sewers.

55 https://uk.practicallaw.thomsonreuters.com/Document/I76ef464b1c9a11e38578f7ccc38dcbce/View/FullText.html.
56 Part I Clean Air Act 1993 c. 11.
57 Note – smoke control orders have now been implemented in most of the UK’s major towns and cities.
59 Water Industry Act 1991 c. 56.
60 Priority Substance Directive 2008/105/EC.
**Water quality**

Under the Water Framework Directive 2000, the UK was required to achieve good ecological and good chemical status across all types of surface water bodies, groundwater bodies and heavily modified or artificial water bodies by 2015. Implemented in England and Wales by the Water Environment (Water Framework Directive) (England and Wales) Regulations 2003, the Water Framework Directive encourages a more robust approach both to point-source pollution and to diffuse water pollution. The 2009–2014 river basin management plans were updated in 2015, setting out a continued strategy of protection and improvement until 2021.

**Chemicals**

Chemicals in the UK are regulated under the EU Registration, Evaluation, Authorisation and Restriction of Chemicals regime (REACH), as set out in the REACH Regulation 2006. The purpose of the regime is to ensure that chemicals are used in a manner that minimises any unacceptable risks to human health or to the wider environment, based on the transparent sharing of information throughout the chemicals supply chain. The requirements of REACH are being phased in over a 10-year period, with the final stage (registration of substances of 1 tonne or more per year) due to come into force in 2018.

REACH is enforced in the UK via the REACH Enforcement Regulations 2008, with the role of enforcing authority taken on either by the relevant environmental regulator, the Health and Safety Executive, local authorities or the Department of Business, Energy and Industrial Strategy as appropriate. All these bodies are required both to cooperate and to share information with regards to REACH compliance. The European Chemicals Agency (ECHA) is not an enforcing authority in its own right, but it may request enforcing authorities to act on its behalf.

The key provisions of REACH relate to the four limbs of registration, evaluation, authorisation and restriction. Those wishing to supply a substance must first register that substance with the ECHA. The ECHA may therefore exert considerable control over the chemicals industry by refusing registration to a given substance, rendering any manufacturing, import or downstream usage illegal. The supplier will also be subject to an evaluation process by the ECHA and national authorities. This evaluation could include a compliance check of dossiers, an evaluation of testing proposals and a substance evaluation to determine whether the substance in question poses a risk to human health or the environment.

Certain substances identified as ‘substances of very high concern’ (SVHCs) by the ECHA or national authorities will require specific authorisation to permit their use or sale. There are four broad categories of SVHCs: substances that are carcinogenic, mutagenic or toxic to reproduction; substances that are persistent, bio-accumulative and toxic; substances that are very persistent and very bio-accumulative; and substances that give rise to similar

---

61 Water Framework Directive 2000/60/EC.
64 Regulation (EC) 1907/2006.
65 REACH Enforcement Regulations 2008/2852.
concerns to those in the previous categories. In addition, substances that are the subject of a restriction proposal by a Member State or the ECHA may be either restricted or banned entirely. Examples of restricted substances include asbestos and acrylamide.

The REACH Enforcement Regulations 2008 also place various obligations on companies operating in the chemicals sector. Failure to comply with these obligations constitutes a criminal offence. Some of the key obligations include:

- neither manufacturing nor placing on the market any substance that has not been registered;
- supplying appropriate instructions to the recipient of a substance;
- providing a safety data sheet;
- providing workers with access to information about the substances they may encounter in the course of their work;
- the application of appropriate measures to control risks; and
- compliance with the conditions of any authorisation. 66

As the UK REACH regime refers to EU legislation, a legislative review process may need to be undertaken as a consequence of Brexit.

v Solid and hazardous waste

Solid waste

The regulatory regime for solid waste covers the entirety of the waste cycle, from generation to transport to disposal. The extent of regulation depends on whether or not an operator is carrying out a 'waste operation', as defined in the EP Regulations.

Waste operations include the recovery or disposal of waste, as well as any preparation of the waste prior to recovery or disposal, and are a regulated activity under the EP regime. As such they require the operator to hold an environmental permit, and the operator must comply with Schedule 9 to the EP Regulations. In addition there are certain further requirements that apply to specific types of waste operations such as landfill sites, treatment of end-of-life vehicles, treatment of waste electrical and electronic equipment, waste incineration, treatment of waste batteries, mining waste operations, radioactive waste and packaging waste.

A business that merely produces waste will not require an environmental permit, as it is not carrying out waste operations. However, such businesses must still comply with the waste hierarchy and the waste duty of care.

Under the Waste Regulations 2011 67 organisations involved in waste must take reasonable steps to apply the waste hierarchy when transferring waste. This sets out a priority order for waste management from prevention, reuse, recycling and recovery to environmental disposal as a last resort.

Under the Environmental Protection Act 1990 68 anyone handling controlled waste is subject to the waste duty of care, and therefore must ensure that the waste does not cause harm to the environment and is only transferred to an authorised person.

---

66 Schedule 1 REACH Enforcement Regulations 2008/2852.
68 Section 34 Environmental Protection Act 1990 c. 43.
**Hazardous waste**

Hazardous waste is subject to additional regulation under the Hazardous Waste Regulations 2005,\(^69\) as amended to reflect the requirements of the Waste Framework Directive 2008.\(^70\) Waste is classified as hazardous where it is listed under the EU List of Wastes\(^71\) or the Environmental Protection Act 1990,\(^72\) or where it is specifically determined as hazardous pursuant to the Hazardous Waste Regulations 2005.

Environmental permits are required to carry on waste operations involving hazardous waste as discussed above, and the waste hierarchy and waste duty of care apply. While the requirement for the registration of premises where hazardous waste is produced, collected or removed ended in April 2016, it is still necessary for all parties involved with hazardous waste to maintain detailed records of the production, transport, treatment and disposal of hazardous waste, whether by tipping or some other method of discharge or recovery. In addition there are restrictions on the mixing of hazardous waste, and specific requirements relating to the transport of hazardous waste to ensure consignments are properly tracked.

**Financial provision**

The operators of landfill sites are currently required to make financial provision to cover the costs associated with the closure and aftercare of the site, however, no other operators are required to make financial provisions.

A consultation by Defra and the Welsh government in 2015 found a clear majority of respondents supported the reintroduction of financial provision for all permitted waste operations, and that this provision should be sufficient to cover both the cost of returning the land to a satisfactory state and any foreseeable clean-up costs of any environmental accidents. There was also majority support for increasing the financial provision in relation to landfill sites, although this was more limited. The UK government accordingly expressed an intention to bring forward proposals.\(^73\)

vi **Contaminated land**

**Remediation**

The rules on identifying and remediating contaminated land are set out in the Environmental Protection Act 1990.\(^74\) The purpose of the contaminated land regime is to encourage the remediation of significant historic contamination. As such, it is not an offence in itself to contaminate land, but it is an offence to fail to comply with a remediation notice.

Local authorities are first required to identify contaminated land. Once contaminated land has been identified, the relevant enforcing authority must serve a remediation notice to the relevant persons requiring them to remediate the contamination. The enforcing authority

---

72 Section 62A Environmental Protection Act 1990 c. 43.
74 Part IIA Environmental Protection Act 1990 c. 43.
is typically the local authority, but may be the relevant regulator (i.e., the Environment Agency, Natural Resources Wales, SEPA or NIEA) where the contaminated land in question constitutes a ‘special site’.

In its remediation notice the enforcing authority will identify the reasonable steps required to remediate the land. These steps are determined by reference to the efficacy of any proposed remediation actions, the environmental and health impacts of the remedial actions, the cost of the remediation and the benefits of the remediation in relation to the harm. Ideally, remediation should be aimed towards restoring the land to a position where no further risk of environmental harm is posed, such that the land no longer qualifies as contaminated. The enforcing authority cannot require a higher standard of remediation. However, where the application of this standard is not practical, the enforcing authority can consider a lesser standard.

**Liability for clean-up**

In the first instance, the person who either caused or knowingly permitted the contamination is liable. Such a person is categorised as a Class A person. In the event that no Class A person can be found, the current owner or occupier of the site becomes liable, and is categorised as a Class B person. The Class B person does not need to have been aware of the contamination occurring in order to be liable for it. Given the potential scale of remediation costs, the process of identifying the presence of contaminated land therefore forms a key issue in property transactions or corporate acquisitions involving the transfer of land. A Class B person cannot, however, be liable for water pollution. Where multiple Class A or Class B persons exist, the enforcing authority will apportion liability according to the rules set out in the Environmental Protection Act 1990.75

The enforcing authority also has step-in rights to carry out remediation itself in certain situations, such as in the event of an emergency, where a remediation notice has been breached, where the enforcing authority would not recover all of its costs from the appropriate person, or where no appropriate person can be found.

**Recovery of costs**

In recovering its costs, the enforcing authority must consider the Contaminated Land Statutory Guidance.76 The polluter should pay for the cost of remediation where possible, however, enforcing authorities should aim for a result that is as fair and equitable as possible, including the cost to the taxpayer. The enforcing authority should not consider financial hardship in the process of attributing and apportioning liability; however, it may waive or reduce the final remediation costs should it consider the resulting financial hardship on those liable to be too severe.

As an alternative to recovering the costs of remediation directly, the enforcing authority also has the power to defer recovery by taking a statutory charge over the property in question, provided that the owner of the land caused or knowingly permitted the contamination.77

---

75 Ibid.
77 Part IIA Environmental Protection Act 1990 c. 43.
VII CLIMATE CHANGE

The Climate Change Act 2008\textsuperscript{78} lays out regulation regarding greenhouse gas (GHG) emissions. It requires the UK to reduce its GHG emissions to 80 per cent below 1990 levels by 2050. The relevant GHGs include carbon dioxide; methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulphur hexafluoride.

There are three primary methods used by the government to restrict GHG emissions: the Climate Change Levy; the Emissions Trading Scheme coupled with the Carbon Price Floor; and Climate Change Agreements.

i Climate change levy

Adding approximately 15 per cent to energy bills of businesses and public sector organisations, the climate change levy (CCL) is a carbon tax designed both to encourage the use of energy from renewable resources, and to encourage the use of less energy more generally. There are four categories of taxable commodities that are subject to the CCL: electricity; natural gas as supplied by a gas utility; petroleum and hydrocarbon gas in a liquid state, including liquid petroleum gas; and solid fuels. Solid fuels are categorised as: coal and lignite; coke and semi-coke of coal or lignite; petroleum coke; and low-value solid fuel with an open market value of no more than £15 per ton. However, exemptions were introduced in 2014 for energy used in metallurgical and mineralogical processes, and for solid fuels used in certain gasification processes. The rate of CCL has increased almost every year since 2007, broadly in line with inflation determined with reference to the retail price index (RPI).\textsuperscript{79}

ii Emissions Trading Scheme and Carbon Price Floor

The Carbon Price Floor (CPF), introduced in April 2013 as part of the government policy of Electricity Market Reform, places a minimum price on GHGs emitted by the power sector. The CPF is designed to supplement the EU Emissions Trading Scheme (ETS) transposed into the UK’s domestic GHG emissions trading regulations, which require companies to buy permits to emit greenhouse gases while generating electricity. Since the price of these permits can fall, the incentive to reduce emissions decreases. The CPF therefore imposes a minimum price that companies must pay in order to pollute, providing a baseline incentive for companies to cut emissions. In the 2014 Budget, the government declared that the Carbon Price Support (i.e., the difference between the future market price of carbon and the floor price that acts as one component of the CPF) would be capped at £18 per ton of CO$_2$ from 2016 to 2020.\textsuperscript{80} This cap was extended in the 2016 Budget until 2021.\textsuperscript{81}

\textsuperscript{78} Climate Change Act 2008 c. 27.

\textsuperscript{79} https://uk.practicallaw.thomsonreuters.com/Document/12c9bce0e67f11e398db8b09b4b043e0/View/FullText.html.


Climate change agreements
For energy-intensive businesses looking for discounts on the CCL, climate change agreements (CCAs) were introduced in 2012. These are voluntary agreements made between the Environment Agency and sector associations and their members. The agreements set targets for industries to improve energy efficiency or reduce CO₂ emissions. Meeting set targets makes the industry eligible for the discount CCL tax rate. From 1 April 2013, the discount received is 90 per cent. However, failure to meet the set targets under a CCA can result in the imposition of a financial penalty. If operators of CCAs fail to meet their requirements, they can continue to be eligible for the discounted tax if they pay a buy-out fee to cover the deficit.

The Committee on Climate Change (CCC), established as part of the Climate Change Act 2008, is an independent body that advises the government on how it should meet its carbon budgets and carries out annual assessments as to whether the government is meeting its requirements. In 2014, UK emissions were 35 per cent below 1990 levels. The first carbon budget was met by the UK government, and the CCC has predicted that the government will be able to meet its second and third budgets. However, meeting the fourth budget (2023–2027) will not be possible without further measures. In order for the UK to cut its emissions by 80 per cent below 1990 levels by 2050, domestic emissions must be reduced by at least 3 per cent a year.82

iv The UNFCCC, the Kyoto Protocol and the Paris Agreement
The UK is also a party to the United Nations Framework Convention on Climate Change (UNFCCC),83 and accordingly a signatory to the Kyoto Protocol84 and most recently to the Paris Agreement,85 which entered into force on 4 November 2016. The Paris Agreement places various requirements on its signatories to limit global temperature increases by, among other things, meeting nationally determined contributions (NDC), peaking GHG emissions as soon as possible and progressing towards zero net emissions, minimising the loss and damage from climate change and supporting climate change adaptation, providing financial support to developing countries and cooperating with other signatories to transfer technology, achieve NDCs, build capacity of developing countries and improve public awareness and transparency.

The UK has committed to a legally binding target of cutting carbon emissions to 57 per cent below 1990 levels by 2032.86

VIII OUTLOOK AND CONCLUSIONS
The UK government is planning numerous environmental reforms envisioned to take effect over the coming years. These will define the UK’s future environmental and climate change policy and the mechanisms to apply it. Water abstraction is a key focus, with Defra and the Welsh government concluding a consultation in January 2016 and committing to implement

82 https://uk.practicallaw.thomsonreuters.com/Document/I2cc9bcc0e67f11e398db8b09b4f043e0/View/FullText.html.
84 http://unfccc.int/kyoto_protocol/items/2830.php.
86 The Carbon Budget Order 2016/785.
reforms of the current abstraction licensing system by the early 2020s. The intention of the reforms is both to improve flexibility in addressing short-term water availability, and to improve long-term sustainable management supporting growth and investments. In particular, proposals include the introduction of water trading in areas of water scarcity and the incorporation of water abstraction and water impounding into the EP regime.87

The UK government is also proposing a simplification of the regulatory regime relating to business energy efficiency through the closure of the CRC Energy Efficiency scheme from April 2019 and its replacement with an increased climate change levy.88 The proposals include a consultation on a new simplified energy and carbon reporting framework, again with the intention of introducing the new framework in April 2019.89

Finally, the regulatory framework for hydraulic fracturing of shale gas continues to develop in response to industry studies as well as community and NGO pressure. Most recently, in August 2016 the government launched a consultation on a Shale Wealth Fund,90 which would include options to use a significant proportion of the proceeds to provide funding for local households and communities.91

Chapter 15

UNITED STATES

Theodore L. Garrett

I INTRODUCTION

US environmental law had its impetus with Earth Day in 1970, when millions of people demonstrated in favour of environmental reform. EPA was created in 1970, and the Clean Air Act was passed that year. Those events were followed by the enactment of the Clean Water Act in 1972, the Solid Waste Disposal Act and the Toxic Substances Control Act in 1976, and the Superfund Law in 1980. A complex and lengthy set of implementing regulations have been promulgated by EPA over the years, set forth in 40 Code of Federal Regulations, the printed version of which is more than 3 feet wide. During the 2016 presidential campaign, the President-elect, Donald Trump, promised to scale back government regulation and criticised the Obama administration’s Climate Action Plan. A more business-friendly climate, including support for oil and gas production on publicly owned lands, can also be expected. It remains to be seen what specific policies the new administration will pursue in the environmental area, but a change in direction and priorities can be expected.

II LEGISLATIVE FRAMEWORK

The principal sources of environmental law are statutes enacted by the US Congress and signed by the President, as well as common law that addresses personal injuries and related matters. Federal statutes that address air quality, water quality, chemicals, and solid and hazardous waste are discussed below. Numerous other US laws, such as those involving endangered species, marine mammal protection, noise control, surface mining control, oil pollution, and coastal zone management, are beyond the scope of this chapter, as are laws of individual states that in some cases have developed more stringent environmental programmes.

1 Theodore L. Garrett is senior counsel at Covington & Burling LLP.
With respect to treaty obligations, the United States is a signatory to the 1987 Montreal Protocol to phase out chlorofluorocarbons, and the 2016 Kigali Agreement concerning the use of hydrofluorocarbons, chemicals with high climate-change potential. The United States is also a signatory to the 2016 Paris Agreement on climate change, which is discussed below.

III THE REGULATORS

US national environmental laws are principally implemented by the US Environmental Protection Agency (EPA). The EPA headquarters in Washington, DC focuses on the development of regulations and national policy. The 10 EPA regional offices focus on implementation and enforcement. Other agencies, such as the US Forest Service within the Department of Agriculture and the Department of the Interior address environmental issues in the context of managing federal lands. The US Army Corps of Engineers has responsibilities with respect to activities in waters of the United States. The US Department of Justice represents EPA and other federal agencies in lawsuits seeking to enforce or challenge agency regulations. In addition, states may be delegated authority to implement and enforce federal environmental laws within their respective states, upon EPA approval of the state’s programme. States in some cases have developed their own programmes that are more stringent than federal programmes.

IV ENFORCEMENT

Environmental enforcement is accomplished through federal and state administrative civil and judicial actions as well as citizen suits. The operation of manufacturing facilities generally requires one or more permits, and companies are subject to civil and possible criminal liability if they operate without a required permit or violate the terms of their permits. In addition, there are a number of air, water and waste requirements established by regulation or statute, the violation of which is enforceable. In enforcement proceedings, the government may seek to require compliance and to recover penalties. In criminal suits, the government typically focuses on conduct that undermines the integrity of the law, such as submitting false information to the government, or egregious conduct that creates significant injury to the public or the environment. The major US statutes also give citizens the right to sue to seek compliance by regulated entities.

The environmental laws discussed below provide that EPA actions, such as the promulgation of regulations and the issuance of permits, are subject to judicial review in the US courts. They also allow citizens to bring lawsuits to compel compliance by companies with regulatory requirements or to compel EPA to perform a non-discretionary duty. I will not dwell on those provisions in discussing the individual statutory programmes.

V REPORTING AND DISCLOSURE

The air, water and waste statutes discussed below require companies to submit permit applications containing information concerning operations and discharges to EPA or a delegated state agency. Companies are also generally required by their permits to monitor
their compliance and submit regular reports to regulatory agencies. Such environmental information is considered information available to the public under the Freedom of Information Act, 5 U.S.C. 552, and EPA’s regulations and similar state laws.

There is an obligation to investigate and remedy real property in connection with transfers of property under some state laws, for example the state of New Jersey statute known as the Industrial Site Recovery Act, NJSA 13:1K-6. In a merger or sale between companies, the requirement of disclosure will depend on the dealings between the prospective buyer and seller, but typically buyers will request information concerning environmental conditions during the due diligence process. In addition, the purchase and sale contract will typically contain representations and warranties concerning environmental conditions and compliance with environmental regulations.

The US Securities and Exchange Commission has adopted rules and policies to require companies to disclose environmental liabilities to the extent necessary to make financial statements not misleading.2 For example, the SEC requires disclosure of certain costs of complying with environmental laws, of environmental litigation, and of risk factors that make an investment risky. Climate change must also be considered when preparing disclosures.

Several federal environmental statutes protect employees from discrimination or retaliation for reporting violations of environmental laws. These statutes include the Clean Air Act (CAA), the Clean Water Act and Superfund.3

VI ENVIRONMENTAL PROTECTION

The regulatory framework of several key environmental programmes is summarised below. Please refer to the statutes and regulations for a more complete and detailed understanding of these programmes.

i Air quality

The CAA, enacted in 1970, was the first modern federal environmental control statute.4 It established a federal and state partnership for the development and implementation of air quality regulation. The CAA was amended significantly in 1977 and again in 1990.

Overview

EPA adopts national air quality standards (NAAQS) pursuant to Section 109 of the Act.5 These standards are designed to protect public health and welfare. Standards have been established for six pollutants: sulphur dioxide, particulate matter, nitrogen dioxide, carbon monoxide, ozone and lead.6

---

3 See 42 U.S.C. Section 7622(a) (the Clean Air Act).
4 42 U.S.C. Section 7401 et seq.
5 42 U.S.C. Section 7409.
6 40 C.F.R. Part 50.
The NAAQS are implemented through state implementation plans (SIPs). The SIPs are regulations setting forth specific emission limitations designed to attain and maintain the NAAQS. The plans are developed by the states and submitted to EPA for approval. Once approved, the SIPs are enforceable by both the states and the federal government.

In 1977 Congress added a new Part D to the CAA, addressing problems of continuing non-attainment of the NAAQS. It required emission limits based on ‘reasonably available control technology’ (RACT) for all existing major sources. The 1977 amendments also required, for new sources in non-attainment areas, pre-construction permits based on attainment of the ‘lowest achievable emission rate’ (LAER). The 1977 amendments required pre-construction review and permits for major new sources in attainment areas, which are to achieve limits based on the ‘best available control technology’ (BACT). In addition, SIPs in attainment areas must assure that maximum allowable ‘increments’ or increases in the concentration of pollutants not be exceeded.

In 1990 Congress enacted CAA amendments that revised provisions for areas not attaining the national ambient air quality standards, strengthened automotive tailpipe and fuel requirements, expanded the number of hazardous air pollutants regulated, added requirements for the electric utility industry to control acid rain, and established an important program of operating permits for existing facilities.

Control requirements to meet NAAQS

In ozone non-attainment areas, ‘major sources’ of criteria pollutants are required to apply all reasonably available control technologies (RACT). Sources in ‘serious’ PM10 areas must apply best available control measures.

Major new sources of VOCs and NOx in ozone non-attainment areas must have emission offsets, which vary according to the area’s classification. In addition, special rules apply in serious, severe, and extreme ozone non-attainment areas.

In ozone non-attainment areas, SIPs must include motor vehicle emissions control inspection and maintenance programmes of varying stringency depending upon the area’s classification. In carbon dioxide non-attainment areas classified as serious, SIPs must require oxygenated gasoline in certain areas if necessary to attain the NAAQS by the attainment deadline. In some cases, states may be required to institute transportation control measures to offset growth or bring emissions within projected levels.

7 42 U.S.C. Section 7410.
8 42 U.S.C. Section 7502.
9 42 U.S.C. Section 7503.
10 42 U.S.C. Section 7475(a).
11 42 U.S.C. Section 7473.
12 42 U.S.C. Section 7401-7642.
13 42 U.S.C. Section 7502(c)(1).
14 42 U.S.C. Section 7513a(b)(1)(B).
15 42 U.S.C. Section 7511a(a)(4).
17 42 U.S.C. Section 7512a(b)(3).
New Source Standards
Section 111 of the Clean Air Act authorises EPA to promulgate standards of performance for new stationary sources. These standards are to require the degree of emission limitation achievable by 'the best system of emission reduction which (taking into account the cost of achieving such reduction and any non-air quality health and environmental impact and energy requirements) the Administrator determines has been adequately demonstrated.' EPA has established standards of performance for a number of industry categories, including steam generating units, incinerators, petroleum refineries, steel plants, kraft pulp mills, automotive surface coating, synthetic organic chemicals plants and natural gas processing plants.

Motor Vehicles
Section 202 of the Clean Air Act authorises EPA to establish motor vehicle emission standards. The Act also authorises EPA to regulate fuels. Pursuant to Section 211 of the Act, EPA has promulgated two sets of standards that limit the lead content of fuels. These standards are designed to prevent interference with catalytic emission control devices and to protect public health.

The Clean Air Act Amendments of 1990 require more stringent tailpipe standards to control exhaust pollutants from cars and trucks, improvements in the controls of evaporative emissions from vehicles, and the installation of equipment on vehicles to control refuelling emissions. The amendments contain a new standard to control CO emissions at cold temperatures, and require the installation of self-diagnostic equipment on vehicles to monitor the functions of critical emission control equipment. The amendments also establish a new programme requiring the sale of 'reformulated gasoline' in the nine worst ozone, non-attainment areas in order to reduce emission of VOCs and other pollutants.

Hazardous pollutants and acid rain
The Clean Air Act authorises EPA to set health-based standards for hazardous air pollutants. The 1990 amendments identify a list of 189 hazardous pollutants and direct EPA to establish standards based on the use of the 'maximum achievable control technology' (MACT). The list includes chemicals and metals used in many industrial processes. Standards for new sources must require a degree of reduction that is not 'less stringent than the emission control that is achieved in practice by the best controlled similar source.' The 1990 amendments direct EPA to establish a programme to reduce the adverse effects of acidic deposition. The Act mandates a national emissions cap of 8.95 million tons per year on emissions of sulphur dioxide from electric utility power plants, to be achieved in two phases. As a result of these stringent new limitations, total annual sulphur dioxide emissions

---

18 42 U.S.C. Section 7411.
19 42 U.S.C. Section 7411(a)(1).
20 See 40 C.F.R. Part 60.
23 42 U.S.C. Section 7412.
24 CAA Section 112(d)(3).
emissions will be reduced by 10 million tons below 1980 levels. Title IV also requires that certain coal-fired electric utility boilers reduce their emissions of nitrogen oxides through installation of ‘low NOx’ burner technologies or their equivalent.

The acid rain programme contains a trading system with a fixed number of fully marketable allowances. Existing utility sources were granted allowances based on their historic fuel use and the emission limitations applicable in 1985. Utility units may not emit sulphur dioxide in quantities exceeding the number of allowances they hold for a given year.

Permit program
The 1990 amendments to the Act added a new Title V to establish an operating programme. The Title V permit programme is designed to be administered by the states if EPA approves a state programme. EPA may veto any permit that it believes does not comply with the applicable CAA requirements. In general, each operating permit will contain enforceable emission limitations, a schedule for compliance, and monitoring, and reporting requirements. Sources subject to the Title V permit requirements include any ‘major source’ as defined in Sections 112 or 302 or Part D of Title I, any source subject to standards or regulations under Section 111 or Section 112, or any source required to have a permit under Part C or Part D of Title I. Under Section 502(b)(6) of the Act, each state permit programme must provide for public notice of, and an opportunity for public comment and a hearing on, all permit applications. Failure to obtain a permit is subject to civil penalties and possible criminal sanctions.

Enforcement
The Clean Air Act is enforceable by the United States, and most of the Act’s regulatory programmes are also enforceable by states with comparable programmes approved by EPA. EPA has the authority to issue compliance orders and to seek administrative penalties. The government may also seek injunctive relief and civil as well as criminal penalties in federal district courts. Citizens are also given authority to bring suits seeking compliance and penalties.

ii Water quality
Discharges of process wastewater and stormwater are regulated under the Clean Water Act (CWA or the Act) through a federal and state programme of facility permits and regulatory standards. As enacted in 1972, the CWA established a permit programme and a deadline for technology-based limits on discharges of pollutants to be achieved by direct industrial dischargers and municipal treatment works as well as any more stringent water-quality-based standards imposed by states.

25 40 C.F.R. Part 73.
26 42 U.S.C. Sections 7661 et al.
27 CAA Section 502(b)(5)(E).
28 42 U.S.C. Sections 7413, 7420.
29 42 U.S.C. Section 7604.
30 33 U.S.C. Section 1251 et seq.
**Technology-based effluent limitations**
In 1977 Congress enacted revisions to the Act that required achievement of ‘best-available technology’ limitations for toxic pollutants and best conventional pollutant control technology’ limitations for conventional pollutants such as suspended solids, biological oxygen demanding (BOD), faecal coliform, and pH. In addition, ‘new-source’ direct dischargers are subject to standards of performance for new sources (NSPS). These technology-based requirements are defined by EPA in extensive ‘effluent guidelines’ regulations that are set forth in 40 C.F.R. Part 400 et seq.

‘Indirect dischargers’ to publicly owned treatment works (POTWs) must comply with pre-treatment standards for pollutants that would interfere with or pass through the POTWs. The new source and pre-treatment standards are generally identical to BAT limits for existing direct dischargers. Indirect dischargers are not required to obtain a NPDES permit, and instead the EPA pre-treatment standards themselves are enforceable against indirect dischargers.

**Scope of the Act**
The CWA is applicable to a ‘discharge of pollutants’ into ‘waters of the United States’ from a ‘point source’ (a discrete conveyance such as a pipe or ditch). The meaning of ‘waters of the United States’ continues to be debated. In *Rapanos v. United States*, 547 U.S. 715 (2006), a 4-4-1 split decision, the plurality opinion by Justice Scalia opined that waters of the United States include wetlands only if they have a surface connection to traditional water bodies, namely oceans, streams and lakes. In Justice Kennedy’s view wetlands are covered by the statute if they significantly affect the chemical, physical, and biological integrity of traditional navigable waters. The government has taken the position that a water body falls within the jurisdiction of the CWA if it satisfies the test in either the plurality opinion in *Rapanos* or Justice Kennedy’s opinion in *Rapanos*. As a result of this confusion, the scope of the Clean Water Act continues to generate controversy. After *Rapanos*, new EPA regulations attempting to define ‘waters of the United States’ have been challenged in court and, as of this writing, the lawsuits have not been decided. States may receive federal grants to monitor and develop projects to address non-point sources of pollution, from rainfall or snowmelt runoff, which are largely unregulated.

**Permit requirements**
Section 404 of the CWA gives the Corps the authority to issue permits for the discharge of dredged or fill material to waters of the United States. Activities that may require Section 404 authorisation include land-clearing, construction of dams, and certain farming activities. Preparation of an environmental impact statement in compliance with the National Environmental Policy Act and other statutes such as the Endangered Species Act may be

---

31 33 U.S.C. Section 1311(b).
32 33 U.S.C. Section 1316.
33 33 U.S.C. Section 1317(b).
34 33 U.S.C. Section 1344.
triggered by a permit application, and compensatory mitigation may be required. The statute contains exemptions for certain activities including normal farming and ranching and the maintenance of dykes, dams, irrigation and drainage ditches.

Dischargers to waters of the United States must obtain and comply with a permit under the National Pollutant Discharge Elimination System (NPDES) programme pursuant to Section 402 of the CWA. Permits must be obtained from EPA or from a state that has an EPA-approved permit programme. NPDES permits contain effluent limitations that apply the technology and water-quality-based requirements of the Act, schedules of compliance and requirements for regular discharge monitoring and self-reporting of monitoring results to the appropriate regulatory authorities.

**Water quality requirements**

Water quality standards are adopted by the states and submitted to EPA for approval. These standards must take into account the uses of a body of water, such as public water supply; propagation of fish and wildlife; recreation; and agricultural, industrial, and other purposes, although in practice EPA has pressed the states to require all streams to meet standards for fishing and swimming and to include an anti-degradation policy to protect existing uses and high quality waters. EPA's criteria for reviewing state standards are set forth in 40 C.F.R. Sections 131.5 to 131.6.

Total maximum daily loads (TMDLs)(i.e., the maximum amount of a given pollutant that may be discharged to a water body from all sources in a day) are a key tool to achieve water quality standards. Section 303(d) of the Act provides that the states shall identify waters that fail to achieve water quality standards, determine the TMDL needed to comply with water quality standards, and allocate these loads among dischargers in permits and water quality plans. States are proceeding to develop TMDLs and implement them in NPDES permits.

Under Section 311 of the CWA, EPA has published regulations (40 C.F.R. Part 116) that determine the quantities of oil and hazardous substances the discharge of which may be harmful to the public health or welfare, known as ‘reportable quantities’. Section 311 does not cover discharges that are in compliance with or otherwise subject to an NPDES permit. A party that discharges a reportable quantity of a listed substance must notify the authorities, is subject to fines, and the federal government is authorised to arrange for the removal of oil or a hazardous substance, and to assess the costs of removal to the responsible party.

**Enforcement and judicial review**

Section 309(a)(3) of the Act authorises EPA to issue an administrative order whenever it finds that a person is in violation of enumerated provisions of the Act or a permit implementing these provisions. EPA may also sue for civil penalties for any violation of an NPDES permit.

---

35 33 C.F.R. Sections 325.2, 332.1(f).
36 33 U.S.C. Section 1342.
37 33 U.S.C. Section 1313(c)(2).
38 33 U.S.C. Section 1313(d).
40 33 U.S.C. Section 1319(a)(3).
an EPA order, or the Act. Section 309(c) of the CWA authorises EPA to seek criminal penalties against responsible persons for wilful or negligent violations and for knowingly making any false statement or report.

iii Chemicals

The Toxic Substances Control Act (TSCA) was enacted in 1976 and gave EPA authority to require testing to determine the effects of chemicals and to impose restrictions on new and existing chemicals where necessary to protect the public health and the environment. Significant amendments to TSCA, enacted in 2016, remain to be fleshed out by EPA in the years ahead and are discussed below.

The definition of a ‘chemical substance’ under Section 3(a)(A) of TSCA is broad and includes any organic or inorganic substance or any combination of such substances, including synthetic organic compounds, raw agricultural commodities, microorganisms, ores and minerals. Food, food additives, drugs, cosmetics and medical devices, which are regulated under other laws such as the Food, Drug and Cosmetic Act, are exempt from TSCA. Also, substances manufactured solely for export from the United States are exempt under Section 12(a) of TSCA, but the exporter must provide notice to EPA if the chemical is regulated under certain provisions of TSCA.

Section 2(b) of TSCA authorises EPA to take action where chemicals present an unreasonable risk of injury. EPA may take action unless the chemicals in question are regulated under another federal statute.

Section 4 of TSCA authorises EPA to promulgate regulations requiring manufacturers, importers and processors to test chemical substances that may present an unreasonable risk to health or the environment, or if there are insufficient data on the manufacture, use or disposal of the chemical, or if the chemical is produced in substantial quantities and there may be substantial human exposure or environmental release. EPA has also negotiated consent agreements with companies and trade groups to provide test data on chemicals. Pre-manufacture Notice. Under Section 5 of TSCA, a pre-manufacture notice must be submitted to EPA at least 90 days before the start of production or import of a new chemical or an existing chemical used for a significant new use. Existing chemicals are those currently or previously manufactured or processed in the United States and are listed on the TSCA inventory that EPA maintains. A new chemical is any chemical not on the TSCA inventory. Manufacturers and importers must submit specific information in their notice to EPA, including chemical identity, impurities, production volumes, processing methods, intended uses, worker exposure and test data. There are exemptions for new chemicals manufactured or imported in small quantities, and for test marketing of a new chemical.
After a pre-manufacture notice is received, EPA has 90 days to review the company’s notice, and can extend its review to 180 days for good cause. If EPA does not act within the review period, the company may begin to manufacture or import the substance. If EPA concludes that a chemical is hazardous or there is an unreasonable risk or unanswered safety questions, under TSCA Section 5(e) EPA may issue an order to prevent or limit manufacture of the chemical. Alternatively, EPA and the company submitting the pre-manufacture notice may negotiate a consent order providing for various control measures including use limits, labelling requirements, protective equipment for workers, and limits on releases to the environment.

Section 5(f) of TSCA allows EPA to take action if the agency determines that activities involving a new chemical present an unreasonable risk to health or the environment. In that event, EPA can publish a rule that limits or delays the manufacture, use or disposal of the chemical.50

Existing chemicals
For a chemical on the TSCA inventory, EPA can issue a ‘significant new use rule’, known as a SNUR, requiring that any company wishing to manufacture or process the chemical give EPA 90 days’ prior notice. EPA may take regulatory action, upon receiving a SNUR notice, to control the proposed activity. Subsequent manufacturers or importers must observe such SNUR restrictions or submit their own SNUR notice to EPA at least 90 days before initiating activities inconsistent with the EPA restrictions.

EPA is authorised under TSCA Section 6 to impose restrictions based on a finding that the manufacture, processing, distribution, use or disposal of a chemical or mixture presents an unreasonable risk of injury to health or the environment.51 The restrictions may include banning the substance or mixture, prohibiting or limiting certain uses, or labelling and other hazard notification requirements, taking into account a chemical’s harm and the economic and social costs of the restriction. In addition, EPA may publish a regulation that is effective immediately if there is an imminent hazard.52

Enforcement and recordkeeping
EPA may under Section 7 of TSCA file a suit in federal district court if the agency concludes that the substance or mixture presents an imminent hazard, namely an imminent and unreasonable risk of serious or widespread injury to health or the environment.53 In such an action, the court can issue an order providing injunctive relief, including public notice of risks and a recall of the chemical or product.

Section 8 of TSCA authorises EPA to promulgate rules that require recordkeeping and reporting of information concerning the health and environmental effects of chemicals or mixtures.54 Section 8(c) of TSCA requires manufacturers, processors and distributors to maintain records of significant alleged adverse reactions to health or the environment.55

50 40 C.F.R. Part 747, Part B.
Section 8(d) of TSCA also authorises EPA to require the submission of health and safety studies. Any manufacturer, importer or distributor who obtains information indicating that a chemical presents a substantial risk of injury to health or the environment is required by Section 8(e) of TSCA to report the risk information to EPA within 15 days.

EPA and US Customs regulations require importers to certify at the port of entry into the United States either that the substance is regulated by and complies with TSCA or that it is exempt or not subject to TSCA.

Sections 15, 16 and 17 of TSCA provide for penalties for violations of TSCA and EPA’s implementing regulations. EPA may also bring a lawsuit under Section 17 of TSCA to prevent violations or to compel actions required by the statute or to seize and condemn chemicals and articles containing chemicals that have been manufactured or distributed in violation of TSCA.

**TSCA reform legislation**

In June 2016 President Obama signed into law significant amendments to TSCA, the Frank R. Lautenberg Chemical Safety for the 21st Century Act, Public Law No. 114-182. The 2016 amendments clarify EPA’s review authority for new and existing chemicals and the expected pace and prioritisation of regulatory efforts.

With respect to review of existing chemicals, Section 4 of the 2016 Act directs EPA to first determine whether an unreasonable risk to human health and the environment exists, without consideration of costs. If an unreasonable risk is found, EPA is then to evaluate various regulatory options including consideration of costs and benefits. Section 6 of the 2016 Act directs EPA to prioritise existing chemicals as ‘high priority’ or ‘low priority’. EPA must give priority to known human carcinogens, chemicals with high acute and chronic toxicity, and certain persistent, bioaccumulative and toxic chemicals. EPA must ban, phase out, or impose restrictions on any high priority chemical that poses an unreasonable risk.

The review of new chemicals is changed under the 2016 Act. Under Section 5 of the 2016 Act, EPA is required to review and affirmatively approve new chemicals and significant new uses before they are introduced into commerce. EPA must determine whether or not the chemical is likely to present an unreasonable risk of injury to health or the environment under the conditions of use. If EPA makes a finding of unreasonable risk, EPA must take regulatory action. The new term ‘condition of use’ is defined as the circumstances under which a chemical is manufactured, processed, distributed in commerce, used or disposed of. The 2016 Act may thus have an increased impact on downstream users.

On 29 June 2016, EPA released its plan for the first year of implementing the 2016 Act. EPA plans to publish by June 2017 its procedural rule to establish the EPA’s process and criteria for identifying high-priority chemicals for risk evaluation and low-priority chemicals. By June 2017 EPA also plans to promulgate a rule to require industry reporting of chemicals manufactured or processed in the previous 10 years. The results will be used to designate active and inactive chemicals on the TSCA inventory of existing chemicals. Companies will wish to review the chemicals they use, process or distribute and be prepared to participate in EPA’s implementation of this new law.
FIFRA
The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)\(^{59}\) provides for federal regulation of pesticide distribution, sale, and use. All pesticides distributed or sold in the United States must be registered (licensed) by EPA. Before EPA may register a pesticide under FIFRA, the applicant must show, among other things, that using the pesticide according to specifications ‘will not generally cause unreasonable adverse effects on the environment’. EPA may take enforcement actions against the distribution or sale of unregistered pesticides, registered pesticides whose composition differs from that in the product’s registration, and registered pesticides that are misbranded or adulterated. EPA may also stop the sale of or seize pesticide products that do not meet FIFRA requirements.

iv Solid and hazardous waste
The Resource Conservation and Recovery Act (RCRA), 42 U.S.C. Section 6901 et seq., establishes a cradle-to-grave programme regulating the management of hazardous wastes that is directed by EPA and implemented in large part by the various states. The RCRA programme identifies a broad universe of waste materials as hazardous, and regulates the handling of this waste by generators, transporters, and treatment, storage and disposal facilities. RCRA also imposes corrective action requirements. However, unlike the Superfund statute, 42 U.S.C. Section 9601 et seq., which focuses on remediating past waste disposal at abandoned sites, RCRA addresses the ongoing management of hazardous wastes at manufacturing plants and other facilities. Most states have been authorised by EPA to implement RCRA within their respective state, and states can also impose more stringent requirements than required by federal law.

RCRA was originally enacted in 1976. In 1984, Congress amended RCRA extensively to authorise the regulation of underground tanks, the clean up of contaminated areas of industrial sites not covered by the original law, and increased restrictions on the disposal of wastes on land.

Definition of hazardous waste
Subtitle C of RCRA regulates ‘solid waste’ that is ‘hazardous’. Under RCRA, solid waste is any garbage, refuse, sludge, or other discarded material, including solid, liquid, or gaseous material that is contained.\(^{60}\) EPA’s regulation defining the term solid waste includes secondary materials that are incinerated for energy recovery and disposed of on the ground.\(^{61}\) The definitions distinguish between types of materials (sludges, by-products) and types of activities (reclamation, reuse and disposal). The definition excludes industrial wastewater discharges subject to the Clean Water Act permit programme,\(^{62}\) and recycled materials, such as secondary materials that are returned to the original process and reused.\(^{63}\)

Once a waste is determined to be solid waste, it is considered ‘hazardous’ if the waste exhibits one of four characteristics (ignitability, corrosivity, reactivity or toxicity) as

\(^{59}\) 7 U.S.C. Section 136.
\(^{60}\) 42 U.S.C. Section 6903(27).
\(^{61}\) 40 C.F.R. Sections 261.2, 261.4.
\(^{62}\) 40 C.F.R. Section 261.4(a)(1).
\(^{63}\) Id. Sections 261.2(e), 261.4(a)(8).
determined in tests for these kinds of waste. The toxicity characteristic is determined by the Toxicity Characteristic Leaching Procedure designed to simulate the leaching that would occur at a municipal landfill. Waste is also deemed hazardous if it is specifically listed by EPA as hazardous. The Agency has also listed non-specified sources (F-listed), specific industrial processes (K-listed), and discarded commercial chemical products and pesticides (P and U wastes). Household waste, agricultural waste used for fertilizers and mining waste is exempt. EPA has decided not to regulate oil and gas industry exploration and production wastes, and mineral extraction and beneficiation and certain mineral processing. Under EPA’s mixture rule, any solid waste that is mixed with a listed hazardous waste remains a hazardous waste. In addition, any waste resulting from the treatment, storage or disposal of any listed waste is a hazardous waste.

**Obligations of generators**

Generators of hazardous waste must notify EPA of the initiation of hazardous waste activities, obtain an EPA identification number, and properly store hazardous wastes. Wastes must be properly labelled and must be in proper containers for shipment pursuant to Department of Transportation (DOT) requirements. Generators must use a manifest to track hazardous waste shipments, and maintain records and submit biennial reports that summarise their waste generation activities.

Generators may accumulate wastes on site for 90 days without being subject to all of the requirements for treatment, storage, and disposal facilities. They must, however, label the waste as hazardous and note the date when accumulation begins. Generators that produce no more than 100 kilograms of hazardous waste per month are exempt.

**Obligations of transporters**

Transporters of hazardous waste must comply with the EPA regulations in 40 C.F.R. Part 263, which require that they obtain EPA identification numbers, use proper containers, and implement the hazardous waste manifest system by ensuring that the manifest accompanies the waste to its next point of delivery. If a discharge of hazardous waste occurs during transport, the shipper must provide notice to the EPA National Response Center and must take appropriate action to protect human health and the environment, including clean up of the discharge.

---

64 40 C.F.R. Sections 261.21–.24.
65 40 C.F.R. Part 261, App. II.
66 42 U.S.C. Section 6921(b).
67 40 C.F.R. Sections 261.31, 261.32, and 261.33.
68 40 C.F.R. Sections 261.4(b)(1), (2), and 42 U.S.C. Section 6921(b)(2), (3).
69 40 C.F.R. Section 261.3(a)(2)(iv).
71 40 C.F.R. Sections 262.30–.33.
72 40 C.F.R. Sections 262.20–.23.
73 40 C.F.R. Section 262.34(a).
74 40 C.F.R. Section 261.5(b), (g).
75 40 C.F.R. Section 263.20.
76 40 C.F.R. Sections 263.30–.31.
Transporters are also extensively regulated by the US Department of Transportation under the Hazardous Materials Transportation Act (HMTA), 49 U.S.C. Section 1801 et seq. The DOT regulations applicable to transportation of hazardous waste are contained in 49 C.F.R. Part 171.

**TSDF facilities**

Unless otherwise exempt, all facilities that treat, store, or dispose of hazardous wastes must obtain a permit.77 Treatment, storage, and disposal facilities (TSDFs) are subject to several types of operating and design standards: general facility standards, closure and postclosure care standards, and unit-specific standards. These standards are contained in 40 C.F.R. Part 264. The general standards require that each TSDF obtain an identification number, obtain or conduct waste analyses, implement security measures, schedule regular inspections, and provide personnel training.78 Each TSDF must have a closure plan that includes procedures for removing contaminated soil, cleaning equipment and performing necessary sampling and analysis.79

Each TSDF must demonstrate its financial ability to meet closure and postclosure obligations as well as third-party liability.80 There are several means to demonstrate financial ability, including self-insurance, insurance policies, surety bonds, and parent company guarantees.81

EPA has established specific standards for containers, tanks, land disposal facilities, miscellaneous units, incinerators, furnaces and boilers. Permitted tank systems used to manage hazardous waste must have secondary containment systems and leak detection.82 Incinerators must demonstrate an ability to meet a destruction efficiency of 99.99 per cent of the principal organic hazardous constituent identified in the permit.83 Landfills generally must have double liners, a leachate collection system, and groundwater monitoring.84 Surface impoundments, including lagoons and ponds, are subject to similar requirements.85 In 1984 Congress directed that waste not be disposed of on land unless it is treated to meet standards promulgated by EPA.86

**Enforcement**

EPA has authority under RCRA Section 7003 to require persons to take action necessary to address an ‘imminent and substantial endangerment to health or the environment’.87 As revised in 1984, Section 3004(u) of RCRA also allows EPA to require corrective action for releases from solid waste management units for any person seeking a RCRA permit after

---

77 42 U.S.C. Section 6925.
78 40 C.F.R. Sections 265.11–.16.
79 40 C.F.R. Sections 264.112 and 265.112.
80 40 C.F.R. Parts 264, 265, subpart H.
81 40 C.F.R. Sections 264.143–.145, 265.143–.145.
82 40 C.F.R. Sections 264.191–.196 and 265.191–.196.
83 40 C.F.R. Sections 264.343–.347.
84 40 C.F.R. Sections 264.301 and 265.301.
85 40 C.F.R. Sections 264.220 and 266.220.
86 42 U.S.C. Section 6924(d), (e)(1), (g)(5).
87 42 U.S.C. Section 6973.
1984, regardless of when the waste was placed in the unit.\textsuperscript{88} Section 3004(v) authorises EPA to require corrective action beyond the boundary of a TSDF where necessary to protect human health and the environment.\textsuperscript{89}

\textbf{Underground storage tanks}

In 1984 Congress established a comprehensive program for regulating underground storage tanks (USTs) containing petroleum products and hazardous substances under CERCLA but excluding hazardous wastes under RCRA.\textsuperscript{90} Owners of USTs are required to construct them to maintain structural integrity, to install leak detection systems, to report releases of regulated substances, to take corrective action for releases, and to demonstrate financial responsibility.\textsuperscript{91} The statute contains several exemptions, including tanks used to store heating oil for consumptive use on the premises where stored, and storage tanks in an underground area such as a basement that are above the surface of the floor.\textsuperscript{92}

\textbf{Non-hazardous waste}

For non-hazardous waste, states are directed to develop solid waste management plans and to eliminate the open dumping of solid waste.\textsuperscript{93} Landfills that do not meet EPA design criteria and engage in practices that constitute open dumping are banned.\textsuperscript{94} Medical waste is regulated under Subtitle J of RCRA, 42 U.S.C. Section 6992 et seq., which requires record keeping and manifesting. EPA has promulgated regulations applicable to generators, transporters and processors of used oil. 40 C.F.R. part 279, subparts C, E and F. EPA has also published detailed regulations for the use and disposal of sewage sludge.\textsuperscript{95}

\begin{verbatim}
\textbf{v Contaminated land}

Unlike most federal environmental statutes, which contain regulatory programmes designed to prevent future pollution, the Superfund law addresses releases or threats of releases of hazardous substances as a result of past waste disposal.\textsuperscript{96}

\textbf{Overview}

Section 101(14) of CERCLA defines a ‘hazardous substance’ as a substance falling within six categories of substances regulated under other environmental statutes. EPA has codified the list of CERCLA hazardous substances in 40 C.F.R. Part 302. This list is quite lengthy, and includes common natural substances such as copper as well as more exotic, man-made chemicals.

\end{verbatim}

\textsuperscript{88} 42 U.S.C. Section 6924(u).
\textsuperscript{89} 42 U.S.C. Section 6924(v).
\textsuperscript{90} 42 U.S.C. Section 6991.
\textsuperscript{91} 42 U.S.C. Section 6991(b); 40 C.F.R. part 280.
\textsuperscript{92} 42 U.S.C. Section 6991(1).
\textsuperscript{93} 42 U.S.C. Section 6943.
\textsuperscript{94} 40 C.F.R. Part 257, 42 U.S.C. Section 6945(a).
\textsuperscript{95} 40 C.F.R. Parts 257, 403, and 503.
CERCLA gives the government two basic enforcement tools. EPA may seek to have responsible parties perform remedial action voluntarily or order them to do so under Section 106 of the Act. Alternatively, EPA may arrange to have the necessary remedial action performed by an outside contractor and then seek reimbursement from responsible parties.

The statute provides that where there is a release or threatened release of a hazardous substance from a facility which causes the incurrence of response costs, responsible parties are liable to the government for all costs of removal or remedial action incurred by the United States government or a state and damages for injury to, destruction of, or loss of natural resources. The terms ‘removal action’ and ‘remedial action’ are defined broadly in the Act. The government may not undertake response action as to naturally occurring substances, or for exposure within residential buildings or business or community structures. Courts have held that claims for lost property values, and loss of income or profits are not recoverable response costs under CERCLA. See Wehner v. Syntex Corp., 681 F. Supp. 651, 653 (N.D.Cal. 1987). Similarly, the courts have held that CERCLA does not authorise parties to bring suits for recovery of personal injuries.

**Liability and defences**

Section 107(a) of the Act establishes four categories of responsible parties:

1. the owner and operator of a vessel or a facility;
2. any person who at the time of disposal of any hazardous substance owned or operated the facility;
3. any person who by contract, agreement or otherwise arranged for disposal or arranged with a transporter for disposal of hazardous substances owned or possessed by such person; and
4. any person who accepts hazardous substances for transport to disposal facilities or sites selected by such person.

The third category of ‘arranger’ or ‘generator’ liability has been most frequently applied to manufacturing companies. A company is liable as an arranger if it takes intentional steps to dispose of a hazardous substance.

The liability established by Section 107 is subject to the following defences: (1) an act of God, (2) an act of war, and (3) an act or omission of a third party. Defendants have rarely relied upon the first two defences. The third defence applies to damage caused solely by an act or omission of a third party ‘other than an employee or agent of the defendant, or than one whose act or omission occurs in connection with a contractual relationship, existing directly or indirectly with the defendant’.

---

97 42 U.S.C. Section 9606.
98 42 U.S.C. Section 9607(a).
99 42 U.S.C. Section 9607(a).
100 42 U.S.C. Section 9601(23) and (24).
104 42 U.S.C. Section 9607(b).
Section 107(b) of CERCLA provides an affirmative defence to current owners of contaminated property if the release and the damages were wholly caused by an act or omission of a third party other than one whose act or omission occurred in connection with a contractual relation with the defendant. The statute also excludes innocent landowners from the definition of ‘contractual relationship.’ This provision allows a defendant to avoid liability if it can show that the property was acquired after the disposal took place and the defendant ‘did not know and had no reason to know’ that hazardous substances had been disposed of on the property.

Although the statute as enacted in 1980 was silent on the issue, the courts have held, based on general tort law principles, that if two or more defendants cause an indivisible harm, ‘each is subject to liability for the entire harm.’ Subsequent judicial decisions have adopted the approach in Chem-Dyne and have held that the statute imposes strict, joint and several liability to the government (see e.g., United States v. Monsanto, 858 F.2d 160 (4th Cir. 1988)). The courts have also held that liable parties at a multiparty Superfund site may avoid joint and several liability if a court finds a ‘reasonable basis’ to apportion their liability.

CERCLA provides a right of contribution. Section 113(f) of the Act, added in 1986, expressly provides that ‘[a]ny person may seek contribution from any other person who is liable or potentially liable under Section 9607(a). . . .’ 42 U.S.C. Section 9613(f)(1). Section 113(f)(2) provides contribution protection for parties who have settled their CERCLA liability with the United States or a state. In addition, companies may be able to recover clean up costs from their insurance carriers. The terms of such policies have changed over time, and the obligations of carriers to indemnify for Superfund losses will depend on the language of applicable policies.

Section 113(f)(1) of CERCLA states that in resolving contribution claims, the courts may ‘allocate response costs among liable parties using such equitable factors as the court determines are appropriate’. Judicial decisions and commentators have focused on the amount of hazardous waste involved, the degree of toxicity of the waste, the degree of involvement by the parties, the degree of care exercised by the parties, and the degree of cooperation by the parties with government officials to prevent harm (see e.g., United States v. A&F Materials, 578 F. Supp. 1249, 1256 (S.D. Ill. 1984)).

Clean up of contaminated sites
Since the passage of CERCLA in 1980, EPA has identified thousands of inactive hazardous waste disposal sites as potential sites for CERCLA remediation. These sites are screened, and priority sites for action are listed on the National Priorities List. Once EPA determines that remedial measures may be necessary, the agency undertakes various steps to study the site further, to select a remedy, and to design and implement the remedy.

Section 105 of CERCLA provides for the establishment of a national contingency plan (NCP). The plan sets forth the organisational structure, procedures and standards

108 42 U.S.C. Section 9605.
for responding to releases of hazardous substances under CERCLA. The NCP is set forth in 40 C.F.R. Part 300. Sites included on the NPL become eligible for government financed remedial action.\textsuperscript{109}

In order to select and implement a remedial action, EPA must go through several steps, including a remedial investigation and feasibility study. The remedial investigation (RI) is a process to determine the nature and extent of the problem at a site.\textsuperscript{110} The feasibility study (FS) develops and evaluates appropriate remedial alternatives using nine criteria including overall protection of human health and the environment, compliance with applicable or relevant and appropriate requirements, long-term effectiveness and permanence, reduction of toxicity, mobility or volume through treatment, implementability, cost, and state and community acceptance.\textsuperscript{111}

Once the RI/FS is completed, EPA reviews the proposed remedial alternatives and selects a remedy after circulating a draft and considering public comments. The agency's final remedy is embodied in a document called a record of decision (ROD). The ROD must document all the facts, analyses and policy determinations considered in the selection of the remedy.\textsuperscript{112}

\textbf{Settlement and enforcement}

Responsible parties may settle with the government by paying appropriate response costs or by agreeing to perform the remedy. Agreements to perform the remedy must be embodied in a consent decree.\textsuperscript{113} CERCLA provides that a party who has entered into an administrative or judicially approved settlement with the government 'shall not be liable for claims for contribution regarding matters addressed in the settlement'.\textsuperscript{114}

Alternatively, Section 106(a) of CERCLA authorises the government to issue orders requiring parties to undertake specified remedial actions. Any person who without sufficient cause fails or refuses to comply with such an order is subject to fines and may be liable for damages of three times the amount of costs incurred by the government as a result of failure to take action.

The government may also undertake to perform the clean-up actions required and then bring an action in federal court under Section 107(a) of CERCLA seeking to recover its response costs at a site. CERCLA provides that judicial review of any issues concerning the adequacy of any response action taken by EPA shall be based on the administrative record.\textsuperscript{115}

\textbf{Natural resource damages}

CERCLA authorises the government to recover damages to natural resources. A claim for damage to natural resources must be brought by the designated trustees for natural resources

\textsuperscript{109} 42 U.S.C. Section 9604(a).
\textsuperscript{110} 40 C.F.R. Section 300.430(d).
\textsuperscript{111} 40 C.F.R. Section 300.430(e).
\textsuperscript{112} 40 C.F.R. Section 300.430(f)(5).
\textsuperscript{113} See 42 U.S.C. Section 9622(d)(1)(A).
\textsuperscript{114} 42 U.S.C. Sections 9613(f)(2), 9622(h)(4).
\textsuperscript{115} 42 U.S.C. Section 9613(j).
acting on behalf of the public. The designated federal trustees are the Secretaries of Interior, Commerce, Defense, Agriculture and Energy. The states have generally also designated one or more trustees for state resources.

The elements of liability for natural resources damages are the same as those under Section 107(a) of CERCLA. In addition, the trustee must show that there has been an ‘injury to, destruction of, or loss of natural resources resulting from’ a release of hazardous substances. Section 107(f) of CERCLA bars the recovery where the damages and the release causing the damages occurred wholly before 11 December 1980, the date CERCLA was enacted. Section 101(16) of CERCLA defines natural resources to mean ‘land, fish, wildlife, biota, air, water, ground water, drinking water supplies, and other such resources’ belonging to the United States or a state.

The statute does not explicate how to measure natural resource damages. The Department of the Interior promulgated regulations pursuant to 42 U.S.C. Section 9651(c) for the assessment of natural resource damages. The trustees are not bound to use the Interior Department’s damage assessment regulations, and increasingly use a habitat equivalency analysis to assess damages.

VII CLIMATE CHANGE

The Clean Air Act as enacted in 1970 and revised in 1990 does not specifically address the issue of climate change from greenhouse gases. However, in Massachusetts v. EPA, 549 U.S. 497 (2007), the US Supreme Court held that greenhouse gases (GHG) fit within the Act’s definition of an air pollutant that EPA may regulate. Subsequently, in December 2009 EPA issued a finding that six classes of GHGs endanger public health and welfare by causing global climate change, and that the GHGs emitted from new motor vehicles contribute to GHG pollution. Subsequently, in May 2010 EPA promulgated GHG emission standards for light duty motor vehicles in model years 2012–2016.

EPA also determined that the Clean Air Act required major stationary sources of greenhouse gases to obtain construction and operating permits. To reduce regulatory burdens, in December 2010 EPA issued Timing and Tailoring Rules (PSD and Title V permitting). The Tailoring Rule focuses on the largest greenhouse gas emitters: power plants, refineries, and cement production facilities.

In June 2013, President Obama announced a Climate Action Plan containing the following key components:

- develop new rules to cut carbon pollution;
- prepare the united states for the impacts of climate change by helping state and local governments strengthen roads, bridges and shorelines from severe weather; and

120 42 U.S.C. Section 9601(16).
c lead international efforts by galvanising international action to significantly reduce emissions, prepare for climate impacts and drive progress through the international negotiations.

Pursuant to these objectives, on 13 May 2010, EPA set greenhouse gas emissions thresholds to define when permits under the New Source Review Prevention of Significant Deterioration (PSD) and Title V Operating Permit programs are required for new and existing industrial facilities. This final rule ‘tailors’ the requirements of these Clean Air Act permitting programmes to limit covered facilities to the nation’s largest greenhouse gas emitters: power plants, refineries and cement production facilities.

**Clean Power Plan**

On 3 August 2015, the EPA issued the Clean Power Plan, which was designed to cut pollution from the power sector by 32 per cent below 2005 levels, while also cutting smog- and soot-forming emissions by 20 per cent. The final Clean Power Plan for Existing Power Plants is a state-based programme under Section 111(d) of the Clean Air Act for existing sources with EPA establishing guidelines and states then designing programs that fit in those guidelines to get the needed reductions in CO₂. EPA also published a proposed Federal Plan for the Clean Power Plan that serves as a model rule for those states that are developing their own Clean Power Plan state plans. Finally, EPA promulgated final standards of performance to address CO₂ emissions from new, modified and reconstructed power plants. These Clean Power Plan regulations were stayed by the US Supreme Court and are being challenged in the US Court of Appeals in Washington, DC. Moreover, president-elect Trump has indicated his opposition to the Clean Power Plan, and it is possible that the new administration will take steps to disavow or substantially change the regulations.

Oil and Natural Gas Air Pollution Standards. On 12 May 2016, EPA issued three final rules that together will curb emissions of methane, smog-forming volatile organic compounds (VOCs) and toxic air pollutants such as benzene from new, reconstructed and modified oil and natural gas sources, while providing greater certainty about Clean Air Act permitting requirements for the industry. EPA estimates that the rules will reduce methane emissions by 510,000 short tons of methane in 2025, the equivalent of reducing 11 million metric tons of CO₂.

**Transportation/mobile sources**

EPA and the National Highway Traffic Safety Administration (NHTSA) are taking coordinated steps to enable the production of a new generation of clean vehicles – from the smallest cars to the largest trucks – through reduced greenhouse gas emissions and improved fuel use. Together, the enacted and proposed standards are expected by EPA to save more than six billion barrels of oil through 2025 and reduce more than 3,100 million metric tons of carbon dioxide emissions.

**Renewable Fuel Standard programme**

EPA is also responsible for developing and implementing regulations to ensure that transportation fuel sold in the United States contains a minimum volume of renewable fuel. EPA estimates that by 2022 the Renewable Fuel Standard (RFS) programme will reduce
greenhouse gas emissions by 138 million metric tons, about the annual emissions of 27 million
passenger vehicles, replacing about 7 per cent of expected annual diesel consumption and
decreasing oil imports by $41.5 billion.

In addition, various US state and local governments have adopted programmes to
address climate change. A discussion of these efforts is beyond the scope of this chapter.

Paris Agreement
Two decades after creation of the UN Framework Convention on Climate Change, parties have
reached a general political consensus in support of reducing global greenhouse gas emissions.
As part of the December 2015 Paris Agreement, countries submitted nationally determined
contributions (NDCs) for GHG mitigation. The governments agreed to a long-term goal of
keeping the increase in global average temperature to well below 1.5°C above pre-industrial
levels and to undertake rapid reductions thereafter in accordance with the best available
science. The agreement traces the way to achieving this target. The agreement went into effect
in November 2016. The Paris Agreement, with its emphasis on consensus-building, allows
for voluntary and nationally determined targets. The specific climate goals are thus politically
couraged, rather than legally binding.

VIII OUTLOOK AND CONCLUSIONS
The relationship between energy and the environment intersects air and water quality
programmes and ranges from the impacts of hydraulic fracturing to climate change to permits
for energy projects such as pipelines. During the presidential campaign, president-elect
Trump promised to end the ‘war on coal’, the use of which has been in decline largely due
to low-cost natural gas. He also criticised the Obama administration’s Climate Action Plan,
the Clean Power Plan and the Paris Agreement on climate change. However, Trump’s energy
plan also promised to ‘conserve our natural habitats, reserves and resources’. It remains to
be seen to what extent the new administration will follow through on promises to scale back
government regulation, particularly in the environmental area. It can be expected that efforts
to roll back environmental regulations will be supported in some quarters and face resistance
in others. The ensuing debate will engage the Congress, the courts, and the states.

Appendix 1

ABOUT THE AUTHORS

MARIANA ARRIETA MAZA  
*Basham, Ringe & Correa, SC*  
Ms Arrieta is a junior associate in the environmental area of the law firm and she graduated from the Instituto Tecnológico Autónomo de México (ITAM) in 2015.  
She has participated in voluntary inspections of industrial facilities of the food, beverage, packaging and pharmaceutical sectors, among others, and her main area of focus is in providing assistance to companies with operations in Mexico with respect to environmental regulatory compliance. She has been involved in investigation projects such as the Environmental Protection Questionnaire of Coral Ecosystems, and the Environmental Impact Assessment Questionnaire supervised by the Cyrus R. Vance Centre for International Justice.  

GIANLUCA ATZORI  
*Cleary Gottlieb Steen & Hamilton LLP*  
Gianluca assists leading companies in the energy, chemical, pharmaceutical, and iron and steel fields in connection with regulatory and litigation issues, arising from environmental and administrative matters.  
In the context of M&A and financing transactions, Gianluca advises on the drafting of contracts, with specific regard to the management of environmental liabilities.  
He also deals with sustainable development issues: green public procurement, climate change, also with reference to the related financial and non-financial disclosures for large corporations, banks and insurance institutions.
In 2016, Gianluca has advised the World Bank in relation to the Italian section of the worldwide project Enabling the Business of Agriculture, on the laws and regulations affecting agricultural productivity, market access, and the policy environment for agriculture.

Gianluca regularly publishes on environmental law matters. He graduated summa cum laude from Cagliari Law School, where he also lectured in corporate human rights compliance and corporate social responsibility from 2011 to 2015. In May 2009, he obtained an LLM degree with honors in international human rights law from Northwestern University – School of Law. Gianluca is a member of the Milan Bar.

LUIZ GUSTAVO BEZERRA
*Mattos Filho, Veiga Filho, Marrey Jr e Quiroga Advogados*

Luiz Gustavo Bezerra is one of the leading Latin American environmental lawyers. He has been a professor of environmental law, environmental impacts related to the oil and gas industry and international environmental law at Universidade do Estado do Rio de Janeiro, School of Law since 2008. He also lectures at Fundação Getulio Vargas, EMERJ and Instituto Brasileiro de Mercado de Capitais, where he teaches energy and administrative law. Luiz is the coordinator of the Brazilian Energy Law Institute (IBDE) Environment Committee. He is qualified to practice law in Europe and a specialist in international and EU environmental law. He is an experienced environmental, energy and natural resources lawyer and advises infrastructure, chemical, mining, real estate, forest and agribusiness clients. Luiz has a successful track record in court and administrative environmental proceedings representing major Brazilian and multinational groups, as well as in negotiations (and other alternative dispute resolution methods) with governmental authorities, public prosecutors and other stakeholders. He has over 15 years’ experience advising clients in complex environmental licensing matters with wide experience in corporate law. He counsels major Brazilian and multinational groups in all environmental related matters, including climate change, sustainability, corporate environmental and social responsibility, waste laws, water laws, biodiversity, environmental offsets, law and economics, oil and gas and renewable energy regulation.

JONATHAN COCKER
*Baker McKenzie*

Jonathan Cocker heads Baker McKenzie’s environmental practice group in Toronto, as part of the global environmental and climate change practice, ranked as a Band 1 practice by *Chambers* and the largest environmental law practice globally. Mr Cocker provides advice and representation to multinational companies on a variety of environment, health and safety matters, including product content, dangerous goods transportation, regulated wastes, food and drug safety, extended producer responsibilities and contaminated lands matters. He appears before both environmental health and safety (EHS) tribunals and civil courts across Canada. Mr Cocker is a frequent speaker and writer on EHS matters, is a participant in a number of EHS national and international industry groups and is an author of the upcoming *Encyclopedia of Environmental Law*. Mr Cocker has advised and counselled on environmental compliance issues for resource, energy, manufacturing and other production facilities, including matters involving air emissions, water discharges, the management, transportation and disposal of waste, and occupational health and safety obligations across Canada, as well as managed environmental liabilities under provincial, territorial and federal statutory and tort law, including in purchase, sale, lease, project development and exit matters.
CANDICE COLMAN
Baker McKenzie
Candice Colman is a graduate at Baker McKenzie with a range of experience in international environmental and commercial transactions and disputes. She holds a Bachelor of Laws with first class honours from Monash University as well as qualifications in both Spanish and Indonesian languages.

CARLOS DE MIGUEL
Uría Menéndez
Carlos de Miguel is a lawyer in the Madrid office of Uría Menéndez. He joined the firm in 1988 and became a partner in 2002.

Carlos’ area of expertise is environmental law although he also advises on energy and real estate law. He works closely with his clients in all economic sectors and on all types of environmental matters in the context of commercial transactions (M&A, loans, IPOs), litigation (before administrative, civil and criminal courts), and ad hoc.

He frequently prepares reports on environmental issues, and advises on dealings with public authorities in relation to environmental matters (authorisations, environmental impact assessments, etc.). He has also participated in drafting environmental legislation.

The main international legal directories regard Carlos as a leading lawyer in environmental law.

RICARDO ELOY EVANGELISTA GARCIA
Basham, Ringe & Correa, SC
Mr Evangelista graduated from Escuela Libre de Derecho and has 10 years of experience in environmental law. His main area of concentration is in providing assistance to companies with operations in Mexico with respect to environmental regulatory compliance.

He formerly worked in the Environmental Protection Office of the Federal District (Mexico City) and then acted as legislative advisor in the Chamber of Deputies of Mexico’s Federal Congress during the 60th legislature.

His professional practice comprises the matters of hazardous wastes, national waters, transference and remediation of polluted sites, environmental assessments, among others.


BÁRBARA FERNÁNDEZ
Uría Menéndez
Bárbara Fernández is a lawyer in the Madrid office of Uría Menéndez. She joined the firm in 2013 and is a member of the public and environmental law practice areas.

She advises public and private entities on aspects of public and regulatory law (sanctioning procedures, public procurement, energy, public infrastructures, telecommunications, authorisations and permits, public authority liability, subsidies, public
property, historical heritage, etc.), and on all specific aspects of environmental law (such as climate change, pollution prevention and control, natural resources, waste, water, mines and coasts).

RAFAEL FERNANDO FELDMANN

Mattos Filho, Veiga Filho, Marrey Jr e Quiroga Advogados

Rafael Fernando Feldmann has solid experience of over 10 years in environmental legal matters, especially involving litigation, infrastructure deals, oil and gas activities and climate change matters. He holds an LLB degree from Universidade Católica de São Paulo and was also nominated as an ISO 14001 EMS Internal Auditor by Bureau Veritas Brazil in 2006. Rafael also undertook a specialist course in administrative law at Fundação Getulio Vargas, which he concluded in 2010. He is a former member of the Environmental Committee of the American Chamber of Commerce in Brazil and a current member of the Legal Committee of the Brazil-Spain Chamber of Commerce in Madrid. He holds an LLM degree in International Law from Instituto de Empresa (Madrid, Spain). Rafael practised as an international associate in the public and infrastructure law department of Pérez-Llorca, Madrid, Spain, from 2013 to 2014. He was nominated by Chambers Latin America as an ‘associate to watch’ in environmental law in Brazil in the 2011, 2012, 2013, 2014, 2015 and 2016 editions.

LINA PIMENTEL GARCIA

Mattos Filho, Veiga Filho, Marrey Jr e Quiroga Advogados

Lina Pimentel Garcia has been working in environmental law for approximately 18 years and has solid knowledge and experience in a wide range of environmental matters, including forests, solid waste, climate change, corporate liabilities, biodiversity, land contamination, licensing, administrative and court proceedings. She has experience serving as an expert witness in the High Court of Justice in London on complex issues relating to Brazilian environmental licensing law and practice. Prior to joining Mattos Filho, she held positions with the state of Sao Paulo environmental agency (CETESB) and the sustainability department of a renewable energy company. She is a professor of graduate and post-graduate courses on environmental law. Lina is also a member and officer of the Environmental, Health, and Safety Committee of the International Bar Association and is a co-coordinator of the Environmental Law Committee of Centro de Estudos das Sociedades de Advogados.

THEODORE L GARRETT

Covington & Burling LLP

Theodore L Garrett is senior counsel at Covington & Burling LLP in Washington, DC. His practice involves major regulatory and enforcement issues and transactions, particularly involving air quality, water quality, energy and climate change, hazardous waste, and natural resource damages. He has been lead industry counsel in numerous lawsuits seeking judicial review of EPA air and water regulations and has represented clients in numerous Superfund matters.

Mr Garrett advises clients on compliance and related business issues and has been extensively involved in administrative proceedings and litigation, including Supreme Court cases. Mr Garrett has spoken and written widely in the environmental area. He is the editor and principal author of The Environmental Law Manual and the RCRA Practice Manual, and
is a contributing author to several books including *Environmental Litigation*, *The Clean Water Act Handbook*, *Litigators on Experts*, and *Environmental Liability and Insurance Recovery*, all books published by the ABA.

He is a former Chair of the ABA Section of Environment, Energy and Resources and remains involved in Section activities. Mr Garrett was honoured in 2015 with a lifetime achievement award from *Who's Who Legal* and the ABA Section of International Law. He is a member of the American College of Environmental Law, where he serves on the Board of Regents. Mr Garrett received his BA from Yale College and his JD from Columbia Law School. He served as a law clerk to US Supreme Court Chief Justice Warren E Burger, and worked as a special assistant to William H Rehnquist when he was Assistant Attorney General in charge of the Office of Legal Counsel at the Department of Justice.

**HENRY VAN GEEN**  
*Allen & Overy*

Henry specialises in environmental, real estate and energy law. He is experienced in advising on contaminated land, product stewardship issues including REACH, waste management and transportation, climate change and emission trading, and environmental litigation in civil and administrative courts. Henry has broad experience in all aspects of planning and developing (infrastructure) projects such as wastewater purification plants, pipelines, co-generation plants, waste-to-energy plants and power plants. He is a member of the Association for Construction Law, the Association for Environmental Law and The International Environmental Lawyers Network. Henry is recognised by independent legal directories as being one of the top environmental lawyers in Europe, and teaches about environmental issues and liability in corporate transactions at the post graduate Grotius Academy.

**FEE GOOSSENS**  
*Allen & Overy LLP*

Fee Goossens is a senior associate in the Belgian environmental and regulatory law department.

As a member of the Global REACH team, she regularly advises international clients on compliance with REACH and CLP (classification, labelling and packaging). She also has extensive experience of advising on product regulations, including WEEE and RoHS and (renewable) energy projects.

In addition, she advises clients on a wide range of environmental, and zoning and urban planning related issues (including soil contamination and permitting issues), and has extensive litigation expertise.

In 2016 she completed a secondment at our New York office, strengthening her working relationships with our US clients.

Fee holds an LLM from the Katholieke Universiteit Leuven (KUL) and speaks Dutch, French and English fluently.

**JENNIFER HUGHES**  
*Baker McKenzie*

Jennifer Hughes heads Baker McKenzie's Australian environment and planning practice. Jennifer has over 20 years’ experience advising on environmental and planning law and advises government, developers and industry on issues relating to town planning, contaminated land, hazardous materials, environmental licensing, waste management and regulation,
supply chain compliance, heritage, Aboriginal land claims and pollution incidents. She holds a science degree with majors in ecology and biology, and regularly writes articles and presents on environmental topics.

**ROB VAN DER HULLE**  
*Allen & Overy LLP*  
Rob specialises in spatial planning, environmental law, public law and civil law. Rob graduated in both civil and administrative law and political science at the University of Leiden and joined Allen & Overy in September 2015, having gained substantial experience working at the Dutch Council of State in environmental and spatial planning matters.

**TALLAT S HUSSAIN**  
*White & Case LLP*  
Tallat Hussain is senior environmental counsel in the energy infrastructure, asset and project finance group at White & Case LLP in London. She has over 20 years of public and private sector experience in the UK, Europe, Americas and throughout EMEA. Her extensive practice includes representing corporate and financial clients in various sectors, including infrastructure, oil and gas, mining, manufacturing and renewable power, with an emphasis on regulatory compliance and environmental and social impact assessment. Much of her work focuses on various international requirements such as the Equator Principles, IFC Performance Standards and OECD Guidelines. She also advises on corporate social responsibility, human rights and sustainability issues, including climate change policy and green finance mechanisms such as green bonds and emissions trading. Tallat sits on the legal advisory group of the Climate Bonds Initiative and the core advisory group for the UK Green Finance Initiative.

**RAK KYUN IM**  
*Shin & Kim*  
Rak Kyun Im is an associate at Shin & Kim. As a member of the firm’s environmental law practice group, he has handled a number of cases involving various environmental issues as well as litigations focusing on administrative law issues for both domestic and overseas clients. He graduated from Seoul National University, College of Law, where he obtained his LLB in 2005. He obtained an MA in environmental law in 2012 at Seoul National University, Graduate School of Justice, where he also completed PhD coursework in environmental law in 2016. He is a member of the Korean Bar Association.

**SANJEEV KAPOOR**  
*Khaitan & Co*  
Sanjeev has gained invaluable experience in constitutional law, general trade and commercial laws, arbitration as well as laws relating to environment, energy, infrastructure and mining. Sanjeev is a registered Advocate on Record with the Supreme Court of India since the year 2003. Sanjeev has vast experience in international and domestic arbitration, environmental and energy laws as well. Handling complex environmental disputes before the National Green Tribunal of India as well as other Indian courts along with alternative dispute resolution before national and international forums has been one of his areas of expertise and forte. To his credit, he has appeared and successfully handled and also argued cases before various forums and courts including the Supreme Court of India, before various State High Courts.
and domestic and international arbitral tribunals. He has also been a speaker and a panellist at various conferences and seminars organised by august bodies such as the IBA, UIA, GAR, LCIA India, Indian Council of Arbitration, etc.

HYUN AH KIM
Shin & Kim
Hyun Ah Kim is a partner at Shin & Kim. Her main areas of practice include environmental law and general corporate transactions. She has advised many multinational corporations as well as domestic companies in various environmental law issues including the new environmental regulations such as the Act on Registration, Evaluation, Authorisation and Restriction of Chemicals (K-REACH) and the Act on the Allocation and Trading of Greenhouse-Gas Emission Allowances. She also has worked closely with government agencies such as Ministry of Environment and Ministry of Trade Industry and Energy as environmental law expert. She graduated from Seoul National University (LLB, 1994) and NYU School of Law (LLM, 2005). She also completed PhD coursework in environmental law at Seoul National University in 2010. She is a member of the Korean Bar Association and New York Bar Association.

JACQUELYN F MACLENNAN
White & Case LLP
Jacquelyn MacLennan has practised EU environmental law in Brussels for more than 25 years. She represents major multinational corporations, governments, trade associations and NGOs, focusing on EU and international regulations (eg REACH, RoHS, WEEE, other chemicals and packaging regulation, environmental impact assessments, Aarhus Convention, Montreal Convention, Kyoto Convention and Paris Agreement, and emissions trading regulations). She also advises on EU competition law, trade law and internal market regulatory issues, and specialises in problems in the interface of environmental law with these other areas of EU law. Jacquelyn litigates regularly before the EU and UK courts, and represents clients before the European Commission. She is recognised as a Leading Lawyer: Environment: EU Regulatory – Belgium, Chambers Europe 2016, and is ranked Tier I in The Legal 500. She regularly teaches EU law and speaks at conferences on the subject of environmental law. She is an Honorary Fellow at the Europa Institute of the University of Edinburgh.

ILONA MILLAR
Baker McKenzie
Ilona Millar is an environmental and projects lawyer with a diverse range of experience in climate law and policy. Prior to Baker McKenzie, Ilona worked for the Foundation for International Environmental Law and Development and was former principal solicitor at the NSW Environmental Defender’s Office. Her particular focus is advising on the legal aspects of international and domestic climate change policy, carbon markets and emissions trading. Most recently, Ilona has been involved in advising Government, large emitters, project developers and market participants on the design and implementation of carbon pricing schemes in Australia, including the Emission Reduction Fund and the Safeguard Mechanism.
MANUEL GOUVEIA PEREIRA
Vieira de Almeida & Associados
Manuel Gouveia Pereira is managing associate of the environment practice at VdA. He has a law degree from Lusíada University of Lisbon, Faculty of Law, a masters degree in administrative law from the University of Lisbon, Faculty of Law and a postgraduate degree in planning and environmental law from the University of Coimbra, Faculty of Law. He teaches environmental law in the seminar of Politics and Innovation in Environment, in the integrated masters course of Environmental Engineering, and at the Sciences and Technology faculty (FCT) of the New University of Lisbon (UNL). He also teaches the planning law module in the postgraduate course on real estate management and assessment at the Portuguese Institute for Development and Economic, Financial and Corporate Studies (IDEF) – ISEG. Manuel is part of the Portuguese Sustainable Growth Think Tank (PCS). He is frequently invited to talk to the press on environmental matters, being a monthly commentator on waste issues, and is the coordinator of VdA’s Green Project, the firm’s environmental sustainability project. Before joining the firm he worked as legal adviser to two cabinets of the Minister of the Environment and Spatial Planning, between 2007 and 2011. He is actively involved in several transactions in Portugal and abroad, focused on environmental compliance, namely in the waste and water sectors, energy (including renewables), oil and gas, mining, aquaculture, agriculture and the economy of the sea.

MORITZ RADEMACHER
Hengeler Mueller Partnerschaft von Rechtsanwälten mbB
Moritz Rademacher is a senior associate in the Düsseldorf office of the law firm Hengeler Mueller. He studied law at the Universities of Bonn and Stellenbosch (South Africa), wrote his doctoral thesis on the management of unbundled energy companies (s.c.l.) under the supervision of Matthias Schmidt-Preuß and graduated as master of laws (LLM) with a specialisation in international trade law. His legal practice has a particular focus on the energy sector and other regulated industries, banking regulatory matters, food law and European law, which are also subject to his regular publications.

ANUSHKA SHARDA
Khaitan & Co
Anushka has continuous experience of around seven years in the fields of litigation and arbitration. During these years she has gained expertise in environment and pollution laws, general commercial and trade law as well as arbitration. She has represented clients in diverse matters before various forums including the National Green Tribunal, Supreme Court of India, before various State High Courts and domestic and international arbitral tribunals.

JOCHEM SPAANS
Allen & Overy LLP
Jochem specialises in (EU) environmental law, spatial planning law and general administrative law. He advises and litigates for US, European and multinational corporations on all aspects of environmental law, including permit application and legal redress procedures and compliance matters. Recent experiences include various energy and industrial projects, including wind farms and petro-chemical industry sites. Besides, as a member of Allen & Overy’s global REACH and WEEE & RoHS teams, Jochem has substantial experience advising on compliance matters affecting the chemicals and electronics industries. Jochem
is an assistant-professor at the VU University Amsterdam, and a member of the Association for Environmental Lawyers, the Association for Environmental Law, the Association for Construction Law and the Association for Public Law.

SEPPÉ STAX

*Allen & Overy*

Seppe specialises in environmental, spatial planning and energy (contract) law. He advises the firm’s clients active in the (renewable) energy business, the development of infrastructural works and the manufacturing industry in general. Seppe also represents clients in procedures before the Dutch administrative courts. He was admitted to the Amsterdam Bar in 2013 after completing two master degrees and the honours programme of the University of Nijmegen.

GAUTHIER VAN THUYNE

*Allen & Overy LLP*

Gauthier van Thuyne heads the Belgian environmental and regulatory law department and co-chairs the Global REACH practice.

He has extensive experience of advising on compliance with REACH and other chemicals regulatory issues and has represented a number of multinational chemicals manufacturers. He also regularly advises clients on product regulations (including WEEE and RoHS), waste, energy regulations (including EED (Energy Efficiency Directive)) and climate change (EU ETS (Emission Trading Scheme)).

Gauthier also specialises in planning and environmental law (including permits, waste, contaminated land and hazardous substances) of which he has extensive litigation experience. He represents clients before the civil, administrative and criminal law courts.

He also advises on environmental, planning and product regulations in the context of corporate and real estate transactions.

His practice covers various businesses and sectors, including real estate and construction, renewable energy and heavy industry (including chemicals).

Furthermore, Gauthier is part of an IBA Task Force on Climate Change Justice and Human Rights.

Gauthier is consistently recommended by several independent legal directories such as *Chambers* and *Legal 500*.

DIRK UWER

*Hengeler Mueller Partnerschaft von Rechtsanwälten mbB*

Dirk Uwer is a partner of Germany’s premier law firm Hengeler Mueller. Following his studies of law, administrative science, language and literature in Trier, Ferrara, Speyer, Berlin and Newcastle and his assistantship for the later federal constitutional judge Udi Di Fabio and his predecessor at Humboldt-University Berlin, Michael Kloepfer, he wrote his doctoral thesis on the European Convention on Human Rights (s.c.l.) and graduated with specialisation in European law as master of laws (LLM) and master of administrative science (Mag.rer.publ.).

As a practising lawyer in Düsseldorf since 1999 – with extended stages in Berlin and London – he specialises in energy as well as other regulatory, environmental and compliance matters. Dirk Uwer is the author of more than 80 publications; and teaching assignments and guest lectures regularly take him to universities at home and abroad.
## Appendix 2

### CONTRIBUTING LAW FIRMS’ CONTACT DETAILS

<table>
<thead>
<tr>
<th>Law Firm</th>
<th>Address</th>
<th>Tel.</th>
<th>Fax</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALLEN &amp; OVERY LLP</td>
<td>Tervurenlaan 268A avenue de Tervueren, 1150 Brussels, Belgium</td>
<td>+32 2 780 2222</td>
<td>+32 2 780 2244</td>
<td><a href="mailto:gauthier.vanthuyne@allenovery.com">gauthier.vanthuyne@allenovery.com</a>, <a href="mailto:fee.goossens@allenovery.com">fee.goossens@allenovery.com</a></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Apollolaan 15, 1077 AB Amsterdam, The Netherlands</td>
</tr>
<tr>
<td>BAKER MCKENZIE</td>
<td>Level 27, AMP Centre, 50 Bridge Street, Sydney NSW, Australia</td>
<td>+61 2 9225 0200</td>
<td>+61 2 9225 1595</td>
<td><a href="mailto:jennifer.hughes@bakermckenzie.com">jennifer.hughes@bakermckenzie.com</a>, <a href="mailto:ilona.millar@bakermckenzie.com">ilona.millar@bakermckenzie.com</a>, <a href="mailto:candice.colman@bakermckenzie.com">candice.colman@bakermckenzie.com</a></td>
</tr>
<tr>
<td></td>
<td>Brookfield Place, Bay/Wellington Tower, 181 Bay Street, Suite 2100 Toronto, Ontario M5J 2T3, Canada</td>
<td>+1 416 865 6908</td>
<td>+1 416 863 6275</td>
<td><a href="mailto:jonathan.cocker@bakermckenzie.com">jonathan.cocker@bakermckenzie.com</a></td>
</tr>
</tbody>
</table>

BASHAM, RINGE & CORREA, SC
Paseo de los Tamarindos No. 400-A, Piso 9
Colonia Bosques de las Lomas
Cuajimalpa de Morelos
CP 05120 Mexico City
Mexico
Tel: +52 55 5261 0509 / 0518
Fax: +52 55 5261 0496 / 0496
revangelista@basham.com.mx
marieta@basham.com.mx
www.basham.com.mx

CLEYAR GOTTLIEB STEEN & HAMILTON LLP
Via San Paolo 7
20121 Milan
Italy
Tel: +39 02 7260 81
Fax: +39 02 8698 44 40
Piazza di Spagna 15
00187 Rome
Italy
Tel: +39 06 6952 21
Fax: +39 06 6920 0665
gatzori@cgshe.com
www.clearygottlieb.com

COVINGTON & BURLING LLP
850 Tenth Street, NW
Washington, DC 20001
United States
Tel: +1 202 662 5398
Fax: +1 202 778 5398
tgarrett@cov.com
www.cov.com

HENGELESS MUELLER
PARTNERSCHAFT VON
RECHTSANWÄLTEN MBB
Benrather Straße 18-20
40213 Düsseldorf
Germany
Tel: +49 211 8304 0
Fax: +49 211 8304 170
dirk.uwer@hengeler.com
moritz.rademacher@hengeler.com
www.hengeler.com

KHAITAN & CO
Ashoka Estate, 12th Floor
24 Barakhamba Road
New Delhi, 110001
India
Tel: +91 9891299989
Fax: +91 11 4151 5318
sanjeev.kapoor@khaitanco.com
anushka.sharda@khaitanco.com
www.khaitanco.com

MATTOS FILHO, VEIGA FILHO, MARREY JR E QUIROGA
ADVOGADOS
Al. Joaquim Eugenio de Lima 447
São Paulo 01403-001
Brazil
Tel: +55 11 3147 7600
SHS Quadra 6 Set A, Block C – Room 1901
Brasilia 70316-109
Brazil
Tel: +55 61 3218 6000
Praia do Flamengo 200 – 11th floor
Rio de Janeiro 22210-901
Brazil
Tel: +55 21 3231 8200
lpg@mattosfilho.com.br
lgbezerra@mattosfilho.com.br
feldmann@mattosfilho.com.br
www.mattosfilho.com.br
Contact Details

SHIN & KIM
8th floor, State Tower Namsan
100 Toegye-ro
Jung-gu, Seoul
Korea
Tel: +82 2 316 4114
Fax: +82 2 756 6226
hakim@shinkim.com
www.shinkim.com

URÍA MENÉNDEZ
C/ Príncipe de Vergara, 187
Plaza de Rodrigo Uría
28002 Madrid
Spain
Tel: +34 915 860 455
Fax: +34 915 860 691
www.uria.com

VIEIRA DE ALMEIDA & ASSOCIADOS
Av. Eng.º Duarte Pacheco 26
1070-110 Lisbon
Portugal
Tel: +351 21 311 34 00
Fax: +351 21 311 34 00
www.vda.pt

WHITE & CASE LLP
Wetstraat 62 rue de la Loi
1040 Brussels
Belgium
Tel: +32 2 239 26 20
Fax: +32 2 239 26 26
jmaclennan@whitecase.com

5 Old Broad Street
London EC2N 1DW
United Kingdom
Tel: +44 20 7532 2376
thussain@whitecase.com

www.whitecase.com