

# Climate change and low-carbon transition policies in state-owned enterprises

Please cite as: OECD (2022), *Climate change and low-carbon transition policies in state-owned enterprises*, OECD Publishing, Paris, <https://doi.org/10.1787/e3f7346c-en>.

State-owned enterprises (SOEs) are significant actors across sectors that account for substantial sources of global greenhouse gas emissions, such as energy, transportation and infrastructure. To counter this, increasing numbers of state owners are incorporating environmental and climate-related goals in their SOE portfolios. These efforts go hand-in-hand with broader international commitments and an increasing awareness that governments as enterprise owners should “lead by example”. Using data collected from 32 jurisdictions, this report describes national approaches towards promoting climate change and low-carbon transition policies in SOEs based on the OECD Guidelines for Corporate Governance of SOEs.

© OECD 2022.

This work is published under the responsibility of the Secretary-General of the OECD. The opinions expressed and arguments employed herein do not necessarily reflect the official views of the Member countries of the OECD.

This document, as well as any data and map included herein, are without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area.

Cover: © phochi/Getty Images.

# Foreword

State-owned enterprises (SOEs) remain significant players in both OECD and non-OECD economies. While their size and distribution varies across jurisdictions, they frequently operate in carbon-heavy sectors, including energy, transport, and infrastructure, among others. Collectively, SOEs are estimated to be responsible for over one-fifth in direct carbon dioxide emissions annually on a global scale. Thus, SOEs can have a significant impact on climate change, including the ability of states to meet their domestic and international climate commitments.

This stocktaking report outlines national approaches towards promoting climate change and low-carbon transition policies in SOEs based on the *OECD Guidelines on Corporate Governance of State-Owned Enterprises* (SOE Guidelines). As part of providing concrete advice to governments on how to manage their responsibilities as company owners, the SOE Guidelines incorporate considerations related to the environmental and responsible conduct practices applicable to SOEs. Within this context, the Working Party on State Ownership and Privatisation Practices, responsible for monitoring the implementation of the SOE Guidelines, has examined national practices on the role of the state as an owner and efforts to translate climate policies within SOEs.

Information was gathered through a voluntary questionnaire exercise (based on the SOE Guidelines) and follow-up interviews from the following 32 jurisdictions: Argentina, Australia, Austria, Belgium, Brazil, Bulgaria, Chile, Colombia, Croatia, the Czech Republic, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Japan, Latvia, Lithuania, Mexico, the Netherlands, New Zealand, Norway, Peru, the Philippines, Singapore, the Slovak Republic, Sweden, Switzerland, and the United Kingdom. The report is organised as follows: Section 1, provides an overview of climate-related policy commitments and state ownership as a source of GHG emissions; Section 2 takes stock of national practices in advancing climate transition policies in SOEs, following the relevant recommendations of the SOE Guidelines; and Section 3 provides conclusions and policy considerations, and informs on the development of future work.

The report was developed by Nina Chitaia under the supervision of Sara Sultan, both from the Corporate Governance and Corporate Finance Division of the OECD Directorate for Financial and Enterprise Affairs. The report was prepared for publication by Greta Gabbarini, Henrique Sorita Menezes and Liv Gudmundson.

# Table of contents

Foreword	3
Abbreviations and acronyms	6
1 An overview of climate change and the role of state-owned enterprises	7
1.1. Policy background: An alignment on climate change and remaining challenges	7
1.2. SOEs and low-carbon transition	11
1.3. Linking climate transition in SOEs and the OECD SOE Guidelines	14
2 Promoting climate and low-carbon transition policies through state ownership: Stocktaking of practices	16
2.1. Translating climate and environmental policies within state ownership policies and rationales	16
2.2. Climate policies and exercising state ownership	22
2.3. SOEs in the marketplace and meeting climate-related expectations	26
2.4. Enhancing stakeholder engagement and responsible business conduct	29
2.5. Climate transparency and disclosure in SOEs	33
2.6. The role of SOE leadership in advancing climate policies	41
3 Conclusions and policy considerations: State ownership and advancing climate transition policies	45
3.1. Implications for state ownership and advancing climate transition policies	45
Annex A. Questionnaire: Climate change and low-carbon transition policies – The role of state-owned enterprises	50
References	54
Notes	59

## FIGURES

Figure 1.1. Share of government/SOE ownership in energy investment (2015-19)	13
Figure 1.2. Share of state-owned energy investments by economy type and sector (2019)	13
Figure 2.1. Climate-related facilitation mechanisms and soft measures applicable to SOEs in reporting jurisdictions	25
Figure 2.2. Emissions trading systems (ETS) and carbon tax availability in reporting jurisdictions	27
Figure 2.3. Summary of responses regarding the role of SOE leadership in advancing climate policies	42

**TABLES**

Table 2.1. Summary of translating climate policies within SOE ownership policies and rationales	19
Table 2.2. Examples of green co-operative projects within selected jurisdictions	32
Table 2.3. Reporting practices and climate disclosure by country	35
Table 2.4. Summary of selected climate reporting frameworks	37
Table 2.5. Selected jurisdictions where SOEs are subject to climate reporting requirements (as reported by ownership entities)	39
Table 2.6. Description of climate reporting and disclosure practices in reporting jurisdictions	40
Table A.1. Information gathering: Reporting requirements depending on SOE size	52

# Abbreviations and acronyms

APE	Agence des participations de l'État	KPIs	Key performance indicators
CDP	Carbon Disclosure Project	MNE	Multinational Enterprise
CDSB	Climate Disclosure Standards Board	N <sub>2</sub> O	Nitrous oxide
CEO	Chief executive officer	NCP	National Contact Point
CH <sub>4</sub>	Methane	NDC	Nationally Determined Contribution
CO <sub>2</sub>	Carbon dioxide	NF <sub>3</sub>	Nitrogen trifluoride
COP	Conference of Parties	NFRD	Non-Financial Reporting Directive
CSO	Civil society organisation	NOK	Norwegian Krone
CSR	Corporate social responsibility	OECD	Organisation for Economic Co-operation and Development
EBRD	European Bank for Reconstruction and Development	PCAF	Partnership for Carbon-Accounting Financials
ESG	Environment, social and governance	PFCs	Perfluorocarbons
ETS	Emissions trading system	RBC	Responsible business conduct
EU	European Union	SASB	Sustainability Accounting Standards Board
EUR	Euro	SBTi	Science Based Targets initiative
FONFAE	Fondo Nacional de Financiamiento de la Actividad Empresarial del Estado (National Fund for Financing State Business Activity)	SDGs	Sustainable development goals
GBP	British pound sterling	SF <sub>6</sub>	Sulphur hexafluoride
GDP	Gross domestic product	SOE	State-owned enterprise
GHG	Greenhouse gas	TCFD	Task force on climate-related financial disclosures
GRI	Global Reporting Initiative	UK	United Kingdom
GtCO <sub>2</sub>	Gigatonnes of carbon dioxide	UKGIB	UK Green Investment Bank
GtCO <sub>2e</sub>	Gigatonnes of carbon dioxide equivalent	UN	United Nations
GW	Gigawatts	UNFC CC	UN Framework Convention on Climate Change
HFCs	Hydrofluorocarbons	UNGP	United Nations Guiding Principles on Business and Human Rights
IASB	International Accounting Standards Board	US	United States
IEA	International Energy Agency	USD	United States Dollar
IFC	International Finance Corporation		
IFRS	International Financial Reporting Standards		
IIRC	International Integrated Reporting Council		
ILO	International Labour Organization		
IPCC	Intergovernmental Panel on Climate Change		
IR	Integrated Reporting		
ISO	International Organisation for Standardization		
ISSB	International Sustainability Standards Board		
ITF	International Transport Forum		

# **1** An overview of climate change and the role of state-owned enterprises

---

To mitigate adverse impacts of climate change, efforts have been made to lower greenhouse gas (GHG) emissions through both domestic policies and international commitments. However, emphasis has often been placed on the role of the state as a policy maker and a regulator, rather than as an economic actor. State-owned enterprises (SOEs) remain active in carbon-heavy sectors, which has implications on their contributions to climate change. This section provides an overview of climate-related policy commitments and state ownership as a source of GHG emissions.

---

## **1.1. Policy background: An alignment on climate change and remaining challenges**

Since the 1990s, global GHG emissions have increased by 1.5-fold, driven largely by economic activities and the use of fossil fuels, which has contributed to climate change. The OECD economies have historically been responsible for most of the emissions, which peaked in 2007 and have been declining since, partly due to a slowdown in economic activities following the global financial crisis and strengthened climate policies. The rate of progress, however, has varied across economies and has depended on national circumstances, including the rate of economic growth, energy supply and steps taken to reduce emissions (OECD, 2022<sup>[1]</sup>). To address and mitigate adverse impacts of climate change, economies have sought global policy alignment. The key international agreement on climate

change is the UN Framework Convention on Climate Change (UNFCCC), which is the basis for the Kyoto Protocol and the Paris Agreement:

- The Kyoto Protocol was adopted in 1997 and has been in force since 2005. It set internationally binding and differentiated emission reduction targets for six GHGs over 2008-12, and was ratified by 177 parties. Amendments were later introduced, including new commitments and a revised list of GHGs, which are not yet in force.

The Paris Agreement was adopted in 2015 at the UN Climate Change Conference of the Parties in 2015 (COP 21), which strengthened global response to climate change. It introduced the foundations for long-term action and provided a review mechanism for countries to assess and adjust the scale of their contributions. The key objective of the agreement is to limit warming to well below 2°C above pre-industrial levels, which requires parties to set out nationally determined contributions (NDCs) to reduce national emissions and mitigate and adapt to climate change (Box 1.1). At the time of writing, 191 out of 197 Parties to the UN Climate Convention were signatories to the Paris Agreement.

### Box 1.1. Paris Agreement: Key aspects

In 2015, Parties to the United Nations Framework Convention on Climate Change (UNFCCC) reached an agreement (Paris Agreement) to combat climate change by adapting to its effects and improving efforts to promote low-carbon transition. Key aspects of the agreement include maintaining global temperature increase to well below 2°C above pre-industrial levels (while pursuing efforts to further limit increase to 1.5°C); and establishing NDCs and pursuing domestic measures to mitigate negative impacts of climate change.

Other elements of the agreement cover achieving global peaking of GHG emissions, while enhancing adaptive capacity, strengthening resilience and reducing vulnerability to climate change. These efforts include conserving reservoirs; raising awareness of averting, minimising and addressing loss and damage through sustainable development; co-operating voluntarily on market and non-market approaches to mitigate negative impacts of climate change; and ensuring that financial flows are consistent with low GHG emissions and efforts to promote climate resilience through appropriate infrastructure and technologies, capacity-building, and enhanced transparency framework.

To ensure that Paris Agreement is operational, a work programme was launched to develop modalities, procedures and guidelines, while the Conference continues to serve as a meeting of the Parties. Steps have been taken to strengthen technical examination processes and high-level engagement, and to provide urgent finance, technology and support. Parties are also expected to report regularly regarding their emissions and implementation efforts, and to carry out a global stocktake of meeting their objectives every five years, with the first stocktake due in 2023.

Note: Actions under Decision 1/CP.21 may be found here: <http://climateaction.unfccc.int/#CN>

Source: UNFCCC, (n.d.<sup>[2]</sup>).

Following the adoption of the Paris Agreement, 157 parties have submitted their first or updated NDCs (World Resources Institute, 2021<sup>[3]</sup>). Parties to the agreement committed to mobilising USD 100 billion for climate financing and to undertaking a global stocktake exercise in 2023, which aims to assess global progress towards achieving the purpose and long-term goals under the Paris Agreement (Setzer and Higham, 2021<sup>[4]</sup>). More recently, during COP 26 in Glasgow, parties to the agreement sought to introduce new long-term goals, set out the rules for a carbon market between countries and ensure that the implementation of the agreement remained a key driver for international climate action (UNCCC



UK, 2021<sup>[5]</sup>). Specific goals included securing net zero goals by 2050 and maintaining the limit of 1.5°C within reach, along with mobilising finance, adapting to protect communities and natural habitats, and promoting collaboration to combat against climate change (outcomes of COP 26 are summarised under Box 1.2). As of December 2021, over 130 countries had either proposed or legislated economy-wide net-zero emissions targets (Benoit and Clark, 2022<sup>[6]</sup>).<sup>1</sup>

### Box 1.2. COP 26: Summary of key outcomes

COP 26 summit sought to re-affirm Paris Agreement's aim to limit global warming to 1.5°C above pre-industrial levels. Parties also agreed on the Glasgow Climate Pact, which states that the carbon emissions will have to fall by 45% by 2030 to meet this target. It also supports "[phasing] down of unabated coal power", which is the largest source of global temperature increase, while outlining new rules for trading carbon credits across borders, calling for nations to develop more ambitious targets to curb emissions, and requesting an annual report summarising nations' yearly commitments to reduce emissions. The Pact also includes provisions to increase transparency to improve accountability, while reiterating expectations to assess progress as part of the global stocktake in 2023.

Moreover, the US and China, two largest GHG emitters, agreed to work together on climate, and over 100 jurisdictions pledged to reduce 30% of their methane emissions (which dissipates more quickly than carbon but fuels over 80 times more heating over a 20 year period) by 2030. Over 130 nations, possessing 90% of the world's forests, also agreed to halt and reverse deforestation by 2030. In addition, more than 450 financial institutions overseeing USD 130 trillion in assets promised to align their portfolios with the goal of achieving net-zero emissions by 2030. Despite these achievements, certain countries relying on coal have indicated that they will not phase out coal until 2040 or later.

Source: UNFCCC (2021<sup>[7]</sup>), The Glasgow Climate Pact – Key Outcomes from COP26, <https://unfccc.int/process-and-meetings/the-paris-agreement/the-glasgow-climate-pact-key-outcomes-from-cop26>; UN (n.d.<sup>[8]</sup>), COP26: Together for our planet, <https://www.un.org/en/climatechange/cop26>; Hill and Babin (2021<sup>[9]</sup>), What COP26 Did and Didn't Accomplish, <https://www.cfr.org/in-brief/cop26-climate-outcomes-successes-failures-glasgow>.

International alignment on climate change has contributed to further streamlining national laws, policies and regulations to prioritise climate adaptation action, including planning and monitoring, as well as addressing climate-related risks and hazards (LSE & University of Leeds, 2019<sup>[10]</sup>).<sup>2</sup> Actions may include steps to reduce subsidies or state aids for GHG emitting sources, while introducing carbon pricing mechanisms (IEA, 2021<sup>[11]</sup>). Some of these initiatives are as follows:

- **Carbon taxes.** Carbon taxes help promote decarbonisation by rendering low and zero carbon energy more competitive compared to alternatives. By increasing the price of high-carbon energy, carbon prices reduce demand for carbon-intensive fuels, as they encourage emitters to find ways for emission reduction. Moreover, a strong commitment to carbon prices creates certainty for investors in the use of zero and low-carbon technologies, and the development of new ones. According to a recent OECD study, climate-related taxes in the OECD area reached USD 793 billion in 2019, representing 90% of environmentally related tax revenue. Most of the taxes are imposed on energy (77%) and transport (22%) sectors, while pollution and resource taxes play a minor role, and overall progress in imposing carbon pricing remains modest (OECD, 2022<sup>[11]</sup>).<sup>3</sup>
- **Emissions trading systems.** Along with carbon taxing, a number of jurisdictions have started introducing emissions trading systems (ETS) to reduce carbon consumption. Most notably, the EU

ETS was introduced in 2005, which has been a key policy instrument to combat climate change and reduce GHG emissions (see Box 1.3). The system operates in all EU countries, as well as in Iceland, Norway and Liechtenstein. In addition, in 2017, the EU and Switzerland signed an agreement to link their emissions trading systems, which entered into force in 2020. The scheme limits emissions from approximately 10 000 installations throughout EU economies, particularly in manufacturing and transport sectors, covering roughly 40% of the EU's GHG emissions. In July 2021, the European Commission adopted proposals on achieving climate neutrality in the EU by 2050, including a further 55% net reduction in GHG emissions by 2030 to reach climate targets under the Green Deal, and on introducing Carbon Border Adjustment Mechanism to avoid carbon leakage (European Commission, n.d.<sup>[12]</sup>).<sup>4</sup>

### Box 1.3. EU Emissions Trading System (ETS)

The EU ETS is based on a “cap and trade” principle. A cap is set on the total amount of certain greenhouse gases that can be emitted by the installations covered by the system. The cap is reduced over time so that total emissions fall. Within the cap, installations buy or receive emissions allowances, which they can trade with each other as needed. The limit on the total number of allowances available ensures that they have a value. After each year, an installation must fully cover its emissions through allowances, otherwise fines are imposed. If an installation reduces its emissions, it can keep the spare allowances to cover its future needs, or otherwise sell them to another installation falling short on allowances. Trading brings flexibility that ensures emissions are cut where it costs least to do so. A robust carbon price also promotes investment in innovative, low-carbon technologies.

Those covered under the EU ETS are as follows:

- Carbon dioxide (CO<sub>2</sub>) from
  - Electricity and heat generation
  - Energy-intensive industry sectors including oil refineries, steel works, and production of iron, aluminium, metals, cement, lime, glass, ceramics, pulp, paper, cardboard, acids and bulk organic chemicals
  - Commercial aviation within the European Economic Area
- Nitrous oxide (N<sub>2</sub>O) from production of nitric, adipic and glyoxylic acids and glyoxal
- Perfluorocarbons (PFCs) from production of aluminium.

While participation in the EU ETS is mandatory for companies in these sectors, in others only installations above a certain size are included. In addition, certain small installations can be excluded if governments put in place fiscal or other measures that will cut their emissions by an equivalent amount. Furthermore, in the aviation sector, until the end of December 2023, the EU ETS will apply only to flights between airports located in the European Economic Area. According to the OECD, EU ETS has also proven to be an effective tool in driving emissions reductions cost-effectively. This decrease was particularly strong in the electricity generation sector, reaching 13.9%, as the owners of power plants have to buy emission permits for all emissions of their plants.

Source: European Commission, (n.d.<sup>[12]</sup>), EU Emissions Trading System (EU ETS), [https://ec.europa.eu/clima/policies/ets\\_en](https://ec.europa.eu/clima/policies/ets_en); OECD (2021<sup>[13]</sup>), Effective carbon rates 2021: Pricing carbon emissions through tax and emissions trading, <https://doi.org/10.1787/0e8e24f5-en>.

While most countries are taking action, according to the IEA and IPCC, further efforts are needed to promote low-carbon transition to avoid catastrophic damage from GHG emissions linked with climate

change (IEA, 2021<sub>[11]</sub>; IPCC, 2021<sub>[14]</sub>).<sup>5</sup> Despite a slowdown of GHG emissions in the OECD area, particularly in the context of COVID-19, global CO<sub>2</sub> emissions continue to increase, and only a few countries have managed to reduce emission levels in absolute terms (OECD, 2022<sub>[1]</sub>).<sup>6</sup> Growth in energy and transport demands – sectors with a strong presence of state ownership – particularly in emerging economies will continue to have a significant impact on low-carbon transition efforts. International Transport Forum estimated that global transport activity will more than double by 2050 and traffic emissions will rise by 16% compared to 2015 levels, while freight CO<sub>2</sub> emissions are expected to grow by 22% (ITF, 2021<sub>[15]</sub>).<sup>7</sup> Moreover, despite improvements in energy efficiency, total energy supply, of which hydrocarbons are expected to remain a significant share, is expected to increase by over 30% between 2030-50 (OECD, 2022<sub>[1]</sub>; IEA, 2021<sub>[11]</sub>).<sup>8</sup> Further challenges relate to infrastructure investments that may not be compatible for future standards and result in an emissions-intensive development pathway (OECD, 2019<sub>[16]</sub>; 2017<sub>[17]</sub>; 2021<sub>[18]</sub>; LSE & University of Leeds, 2019<sub>[10]</sub>).<sup>9</sup>

## 1.2. SOEs and low-carbon transition

In both OECD and non-OECD economies, SOEs remain important economic actors and maintain presence in sectors with high GHG emissions. Globally, the public sector, including central governments and sovereign wealth funds, owns USD 10.7 trillion of listed equity, which amounts to 10% of global market capitalisation (OECD, 2021<sub>[19]</sub>). While the share of state ownership varies across jurisdictions, it is comparably higher across emerging economies. Moreover, following the impact of the COVID-19 pandemic, the role of state as an economic actor is expected to grow (OECD, 2020<sub>[20]</sub>).<sup>10</sup> While SOEs operate across diverse sectors, they are largely concentrated in network industries, including electricity, gas, and utilities (see Box 1.4). Over 70% of oil and gas production assets (see Box 1.5) and 60% of coal mines and plants globally are state owned, as well as over half of global power generation capacities (OECD, 2020<sub>[20]</sub>; IEA, 2020<sub>[21]</sub>). SOEs also remain significant players in manufacturing, construction and transportation sectors.<sup>11</sup>

### Box 1.4. Sectoral distribution of SOEs

Based on an OECD study conducted in 2017, SOEs in the sample area (excluding China) were mainly concentrated in network industries, including electricity and gas, utilities, transportation and telecoms, which accounted for half of all SOE value and 70% of all SOE employment. Gas and electricity represented 21% of all SOEs in the sample area by value and 10% of SOE employment, with some of the largest national contributors to the sector based in India, Italy, Korea, Norway and France. Primary sector, including the production and refining of hydrocarbons, accounted for 11% of all SOEs by value and 6% by employment. Among all SOEs in the sample area, the largest employers were SOEs operating in the transportation and other utilities (including postal services) sectors, together accounting for 57% of all SOEs by employment. Further to energy and other network industries, financial sector was one of the most prominent, representing 26% of all SOEs by value and 8% by employment in the sample area.

Source: OECD (2017<sub>[22]</sub>), *The size and sectoral distribution of state-owned enterprises*, <https://doi.org/10.1787/9789264280663-en>.

The sectoral distribution of SOEs, particularly in the energy sector, is central for climate change mitigation efforts, as they represent a significant source of GHG emissions (OECD, 2018<sub>[23]</sub>). A recent study *Greenhouse Gas Emissions from State-Owned Enterprises: A Preliminary Inventory* provides an accounting of direct emissions associated with SOEs on a global scale. Based on the study, the state-owned sector is responsible for at least 7.49 gigatonnes of carbon dioxide equivalent (GtCO<sub>2e</sub>)

annually in direct emissions, which is more than emission levels of every country respectively, with the exception of China.<sup>12</sup> Among those inventoried in the study, power sector represented a key source of emissions (amounting to 85% share, 6.39 GtCO<sub>2e</sub>), with additional contributions from oil and gas production and distribution (10%, 0.78 GtCO<sub>2e</sub>), as well as activities related to transport (1.8%, 0.14 GtCO<sub>2e</sub>), cement (1.4%, 0.11 GtCO<sub>2e</sub>), and chemicals (0.6%, 0.05 GtCO<sub>2e</sub>). However, the actual scale of SOE-related emissions globally is expected to be substantially higher, particularly when accounting for a lack of available data on GHG emission among SOEs (including national oil companies and iron and steel manufacturers) (Benoit and Clark, 2022<sup>[6]</sup>).

### Box 1.5. State ownership of oil and gas companies

State-owned oil and gas companies produce roughly 55% of the world's oil and gas, and control up to 90% of global oil and gas reserves. They manage multi-billion-dollar portfolios of public assets, contribute large shares of government revenues, employ thousands of individuals (often accounting for over 1% of national employment), and perform a range of public services. Moreover, some SOEs represent a significant source of government revenues. For example among a sample of countries surveyed by the EBRD, SOEs transferred between 2-18% of their revenues to the government.

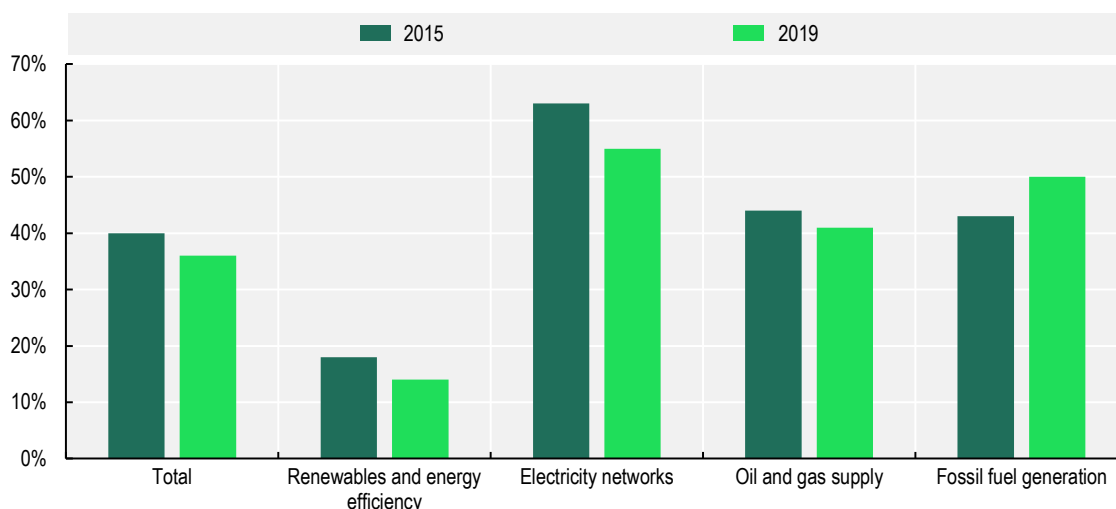
In some jurisdictions, SOEs can also be tasked with performing public service obligations, such as supplying energy at below cost recovery levels or contributing to infrastructure projects. Among the EBRD sample, state-owned oil companies were also highly indebted,\* which raises concerns about broader fiscal risks for government due to explicit or implicit state guarantees. For example, in 2015 KazMunay Gas, the state-owned hydrocarbons company of Kazakhstan, received a bailout amounting to 2.2% of the country's GDP, as the company was facing difficulties covering its debts due to low oil prices.

As state-owned oil and gas companies are often economically and strategically significant – especially for economies that are resource-dependent – how efficiently they are run can matter greatly to support low-carbon transition. Lost revenue due to inefficiencies, underperformance, or irregular practices can divert resources away from investment in cleaner or more efficient energy or investment, which can support low-carbon transition. Moreover, climate-based due diligence processes and mitigation of risks will have a significant impact on promoting climate transition, further to green transition policies, procurement regulations and technological upgrades to promote energy efficiency.

Notes: \*Often the oil companies are heavily indebted because they borrow to finance new investments, meet political agendas or maintain sizable discretionary expenditures. Their borrowing takes forms of loans from banks, oil-backed loans from other oil companies or traders, loans from other government entities, or corporate bonds.

Source: EBRD (2020<sup>[24]</sup>) *Transition Report 2020-21: the State Strikes Back*, <https://www.ebrd.com/news/publications/transition-report/transition-report-202021.html>; Manley, Mihalyi and Heller (2019<sup>[25]</sup>), *Hidden Giants*, <https://www.imf.org/external/pubs/ft/fandd/2019/12/national-oil-companies-need-more-transparency-manley.htm>; Lillis (2015<sup>[26]</sup>), *Kazakhstan: Central Bank Steps In To Prop Up Cash-Strapped Oil Giant*, <https://eurasianet.org/kazakhstan-central-bank-steps-in-to-prop-up-cash-strapped-oil-giant>.

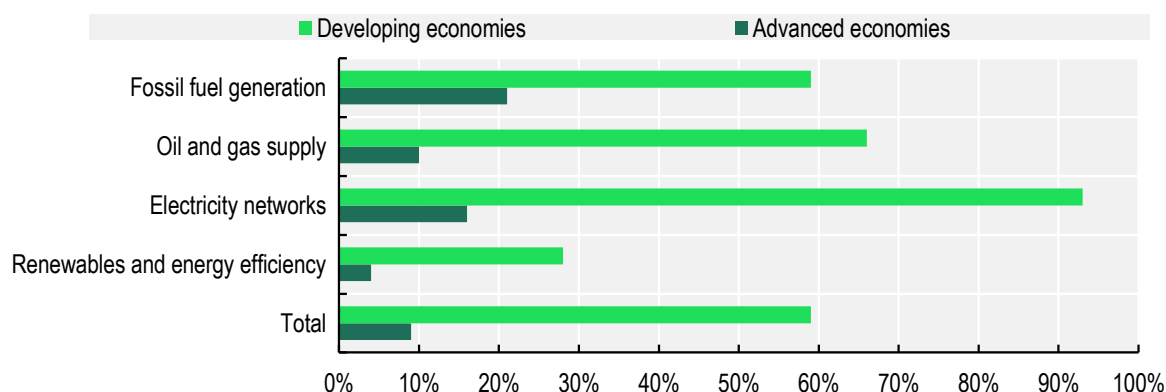
Figure 1.1. Share of government/SOE ownership in energy investment (2015-19)



Source IEA (2020<sup>[21]</sup>), *Share of state-owned energy investments by economy type and sector, 2019*, <https://www.iea.org/data-and-statistics/charts/share-of-state-owned-energy-investments-by-economy-type-and-sector-2019>.

Further to SOE ownership, public sector financing and investments can also impact efforts to promote low-carbon transition. In 2019, the public sector funded approximately 38% of energy investments globally, though levels were higher for promoting fossil fuel generation and lower for renewables and energy efficiency measures compared to 2015 (Figure 1.1). Some of these public investments are channelled through SOEs or state-owned financial institutions. For example, China remains the largest public financier of overseas coal plants, with the country's state-owned banks channelling USD 15.6 billion in overseas coal-fired plants between 2013-18 (Ma and Gallagher, 2021<sup>[27]</sup>). The country's development banks (further to other state-owned companies operating in the hydrocarbons sector) have also been heavily investing in exploration and production of overseas oil and gas reserves (OECD, 2018<sup>[23]</sup>; Jiang and Ding, 2015<sup>[28]</sup>).

Figure 1.2. Share of state-owned energy investments by economy type and sector (2019)



Source: IEA (2020<sup>[29]</sup>), *World Energy Investment 2020*, <https://iea.blob.core.windows.net/assets/ef8ffa01-9958-49f5-9b3b-7842e30f6177/WEI2020.pdf>.

Along with sectoral considerations, SOEs remain dominant players in emerging markets, where growth of economic activity and energy consumption is expected to increase over the following decades (see Figure 1.2) (IEA, 2021<sup>[11]</sup>). In addition to activities shown in the figure, state-owned coal mines represent 9% of coal production in OECD economies, while over two-thirds of state-owned coal production takes place in non-OECD economies (notably, in China, India and Vietnam, coal production is almost entirely state-owned). Similarly, two-thirds of power generation plants in emerging economies are state-owned, compared to 45% in EU and 20% in the US.<sup>13</sup>

However, SOEs also remain significant players in sectors promoting low-carbon transition, and their engagement in low-carbon initiatives will be an important contribution towards meeting national emissions reduction pledges. This can be manifested through SOE involvement in green energy projects, as well as in low-carbon sources<sup>14</sup> and carbon capture and storage projects.<sup>15</sup> Globally, 60% of generation capacities in renewables and nuclear power remain state-owned, as well as a majority of the existing hydropower stations. In addition, state-owned sector has been an important contributor of a growing share of annual renewable capacities. Between 2000-14, yearly capacity additions of renewables (excluding large hydro and nuclear) increased from 0.63 GW to almost 34 GW, which contributed to increasing their market share in renewables from 9% to 23% (OECD, 2018<sup>[23]</sup>).<sup>16</sup> Moreover, SOEs are often responsible for low-carbon sources even in countries where they operate fossil fuels.<sup>17</sup>

### 1.3. Linking climate transition in SOEs and the OECD SOE Guidelines

In recent years, state owners have begun taking steps towards engaging SOEs in low-carbon transition. These steps include reflecting climate-based considerations in ownership policies and individual SOE mandates, encouraging sustainability reporting, working with SOEs to help meet climate-related targets, and measuring the overall climate footprint of their SOE portfolios. According to the 2020 OECD report on *Implementing the OECD Guidelines on Corporate Governance of State-Owned Enterprises*, two-thirds of the 28 countries surveyed had made progress in recent years in national practices concerning the integration of sustainability-related values into government policies, requirements and expectations applicable to the state-owned sector (OECD, 2020<sup>[30]</sup>).

To better understand climate transition policies and the role of SOEs, this study analyses practices based on the *OECD Guidelines on Corporate Governance for State-Owned Enterprises* (SOE Guidelines). The importance for SOEs to minimise environmental footprint, to an extent, is covered under the SOE Guidelines. Notably, SOEs are expected to observe high standards of responsible business conduct, which, according to the annotations, covers environmental expectations that are to be clearly established and disclosed. The SOE Guidelines also stress the importance of following other international standards, including the *OECD Guidelines for Multinational Enterprises*, which further outline steps towards identifying and mitigating environmental risks. While the “ownership entity can communicate its expectations in this regard and require SOEs to report on related performance,” the board and management should ensure that relevant environmental policies are integrated into SOE corporate governance, and adopt appropriate reporting and performance monitoring (OECD, 2015<sup>[31]</sup>).

Along with financial and operational risks, the board is expected to “develop and oversee effective risk management policies and procedures, with respect to human rights, labour, environmental and tax-related issues”. Furthermore, the SOE Guidelines highlight the importance of referring to “best practice and [following] existing guidelines on social and environmental responsibility disclosure”. Appropriate disclosure should be applicable to risk management strategies and systems put in place, including those related to environmental risks. SOEs are also expected to communicate information to stakeholders that may “materially affect the financial and non-financial performance of the enterprise, or have significant impacts on stakeholders”, which may also include environmental measures (among others)

(OECD, 2015<sub>[31]</sub>). In this regard, the SOE Guidelines were used as a basis to develop a questionnaire on climate change and low-carbon transition policies (see Annex A), which was approved by the Working Party on State Ownership and Privatisation Practices, and circulated for inputs by national delegations.

The remainder of this study focuses on understanding how climate-related policies are translated within the state-owned sector in selected jurisdictions that contributed to the OECD questionnaire. Information is based on desk research and inputs from 32 jurisdictions, including through contributions to the questionnaire between June-September 2021 and follow-up interviews. The responses have been streamlined and aggregated into figures and tables to compare practices between jurisdictions.<sup>18</sup> The study also draws from exercises previously conducted by the Working Party, such as transparency and disclosure practices of SOEs (conducted in 2019) and the implementation of the OECD Guidelines (conducted in 2020), as well as an OECD issues paper on climate change and corporate governance, which informs the current revision of the *G20/OECD Principles of Corporate Governance* (OECD, 2022<sub>[32]</sub>).<sup>19</sup>



## **2 Promoting climate and low-carbon transition policies through state ownership: Stocktaking of practices**

---

This section examines practices for promoting climate transition policies within SOEs among reporting jurisdictions. The following sections focus on translating climate policies in SOE ownership policies and rationales, exercising state ownership and applying market-based policies to promote climate transition, enhancing stakeholder engagement and responsible business conduct, climate transparency and disclosure, and the role of SOE leadership in climate transition.

---

### **2.1. Translating climate and environmental policies within state ownership policies and rationales**

The SOE Guidelines state that ownership policies should address the objectives of state ownership, such as the creation of value, the provision of public services, or strategic goals, which should be consistent with rationales for state ownership. As governments work towards translating ambitious international climate commitments into their national policies, there is also a small, but growing trend to translate climate and environmental policies into state ownership policies. In some cases, these also link up to the rationales for state ownership, particularly with regard to addressing market failures or fulfilling activities of public interest which relate to broader policy goals on mitigating climate change.<sup>20</sup> In many cases, the ownership policy serves as a basis from which government owners can translate broader climate-related policy goals and targets into SOE mandates, while also ensuring that their SOE



portfolios are contributing to long-term value creation and that climate-related risks are taken into account in portfolio-level risk management. This section examines how climate-related expectations are translated into SOE ownership policies, mandates and rationales within the reporting jurisdictions, as well as policy co-ordination efforts to ensure alignment with regard to climate change and low-carbon transition.

### **2.1.1. Overview of climate-related policies in reporting jurisdiction**

Nearly all jurisdictions surveyed have adopted comprehensive laws, regulations and policies with regard to climate change, while adhering to international climate-related standards. Based on the responses received, these changes have accelerated in the last decade, which have partly been driven by growing international consensus and awareness with regard to climate change, and the need to promote climate risk mitigation. Moreover, EU economies have also noted significant changes in recent years due to their efforts to align with EU-wide climate directives, regulations, targets and schemes, which they have translated into their national policy frameworks. In particular, the European Climate Law outlines goals set out in the European Green Deal for the EU economy to become carbon-neutral by 2050, while reducing GHG emissions by at least 55% compared to 1990 levels.

Furthermore, nearly all reporting jurisdictions have ratified key international agreements, including the UNFCCC, the Kyoto Protocol and the Paris Agreement, and have adopted and updated their NDCs. Along with introducing laws to mitigate climate change and promote environmental protection measures, majority of the reporting jurisdictions have also introduced relevant strategies, policies, action plans and frameworks, such as on climate, energy and low-carbon transition, and targets to reduce GHG emissions. As further elaborated under Section 2.3, some jurisdictions have adopted mechanisms, such as ETS and carbon taxation, while also using instruments, such as environmental impact assessments, to mitigate adverse climate and environmental impacts.

### **2.1.2. Linking climate goals with state ownership policies**

#### *Overview of current practices*

Among those surveyed, in nearly all jurisdictions the existing climate-related policies, laws, regulations and commitments are applicable to both state-owned and private companies alike. In addition, sector specific laws and regulations may be applicable to advance low-carbon transition.<sup>21</sup> However, some jurisdictions have taken further steps to incorporate climate considerations in state ownership policies and mandates. Approximately one-fifth of respondents have referenced climate-related issues in their state ownership policies or expectations (see Table 2.1 and Box 2.2). These policies are usually framed within a broader context of promoting sustainable development, and reference **international** and national climate commitments made by government (e.g. Paris Agreement, net-zero commitments, etc.). For example, **Finland's** state ownership policy includes corporate social responsibility (CSR) expectations for SOEs. They are also required to take into account the objective of achieving a carbon-neutral Finland by 2035 and contribute to limiting increase in global temperatures based on the Paris Agreement (OECD, 2020<sub>[20]</sub>).

**Germany's** Principles of Good Corporate Governance and Active Management of Federal Holdings set out measures to ensure sustainable governance of the federal SOEs, while considering German Sustainable Development Strategy and Sustainable Development Goals. In addition, the German Federal Climate Change Act requires the state to ensure that SOEs (including fully and partially owned) pursue climate-neutral organisation of their administrative activities. Similarly, ownership policies of **Norway** and **Sweden** reflect requirements to promote sustainable business practices in SOEs, including the achievement of climate-related objectives and compliance with international standards (including the MNE Guidelines). In **France**, specific climate-related expectations for SOEs are identified

in the APE's (ownership entity's) CSR charter, which refers to meeting goals under the Paris Agreement and the national climate action plan.

In addition, as efforts to promote climate transition in SOEs continue to evolve, a number of reporting jurisdictions are currently reviewing their practices. For example, **the Netherlands** adopted its ownership policy in 2013 and subsequently introduced a CSR policy applicable to SOEs as an addendum. Currently, the Ministry of Finance is developing a new ownership policy that will integrate considerations for climate transition and sustainable practices. **Iceland** is also working on updating its ownership policy to incorporate expectations and provisions related to climate. In addition, while **Estonia's** ownership policy states that SOEs should minimise environmental impacts, authorities report that amendments to the policy are foreseen to better regulate take up of CSR practices among SOEs. **Latvia** currently identifies specific goals for SOEs that have a mandate to promote sustainable practices (such as the Latvian State Forests). However, the country has developed a new corporate governance code, which highlights that sustainability policy is applicable to all SOEs.

Some jurisdictions that have no overarching SOE ownership policies report that they translate climate considerations through individual SOE mandates. For example, in **Switzerland** and **Lithuania**, climate-related objectives are communicated to individual SOEs through owner's expectations. In **Hungary**, expectations are reflected in company-specific policies and are aligned with national climate-related strategies and commitments. In **Australia**, specific environmental and sustainability practices can be outlined in SOE corporate plans, while in **the UK**, certain state-owned entities are expected to meet climate commitments that are broadly applicable to other government agencies. Comparably, in **Singapore**, Temasek, the state-owned investment company, integrates climate-related objectives in its strategy and drives these objectives through engagements with portfolio companies (Box 2.1).

In some cases, efforts to encourage SOEs to engage in low-carbon transition are underway in light of legislative changes. For example, in mid-2021, **Ireland** passed an updated Climate Action and Low Carbon Development Act which places, on a statutory basis, a "national climate objective". In November 2021, a Climate Action Plan was published which set a CO<sub>2</sub> equivalent emission reduction target for the public sector (including SOEs) of 51% by 2030, alongside an energy efficiency improvement target of 50% in buildings. In this context, a voluntary framework for SOEs has been designed to reflect the role SOEs are expected to play in decarbonisation (i.e. to lead by example). This Climate Action Framework entails commitments relating to (i) governance and board oversight, (ii) emissions measurement and reduction targets, and energy efficiency targets, (iii) emission evaluation and investment appraisal, (iv) green procurement, and (v) climate disclosure. The Climate Action Framework is referenced in the Climate Action Plan and is expected to become operational in 2022. Further disclosure requirements are expected among **EU economies**, as on-going discussions on EU taxonomy regulations may have an impact on the classification of SOE operations.<sup>22</sup>

### Box 2.1. Temasek's efforts in encouraging low-carbon transition among SOEs

Temasek, founded in 1974, is an autonomous holding company, operating as a global investment company, and is wholly owned by the Government of Singapore. It owns and manages its assets on commercial principles to deliver sustainable value over the long term.

As an investor, Temasek has sought to embed sustainability and ESG considerations within its investment decision-making and management, using various tools to assess possible climate transition impact (such as setting an internal carbon price to inform investment decisions). It is also committed to reducing net portfolio emissions to half of 2010 levels by 2030, while working towards net zero emissions by 2050. As part of portfolio stewardship activities, Temasek monitors relevant ESG factors

in companies throughout the lifecycle of investment, while identifying sustainability-related issues that are of relevance across portfolios. To drive progress on climate change, its approaches include:

- *Encouraging decarbonisation efforts in businesses.* Temasek has advanced dialogue with portfolio companies regarding their climate strategies and emission reduction plans. It exchanges knowledge and tools for carbon measurement, physical climate risk assessment and related disclosure based on international standards. As climate-related risks can be material for many companies, Temasek supports TCFD recommendations to improve and enhance disclosure practices. Moreover, it makes no distinction between fully and partially owned entities in its approaches and efforts to advance climate transition policies.
- *Investing in climate-aligned opportunities.* In particular, Temasek seeks out investments with track records in better carbon intensity and efficiency, with support for elements, such as geothermal energy and carbon capture technologies. It is also looking to work with companies to support decarbonisation journeys. To further accelerate decarbonisation solutions and accelerate global efforts to achieve a net zero economy by 2050, Temasek has established a partnership with Blackrock. An initial funding of USD 600 million from BlackRock and Temasek will deploy private capital with a focus on early stage growth companies targeting next-generation renewable and mobility technology, including emerging fuel sources, grid solutions, battery storage, and electric and autonomous vehicle technologies, as well as in building and manufacturing sectors to drive decarbonisation, resource efficiencies, and material and process innovation.

Source: Questionnaire responses from Temasek.

**Table 2.1. Summary of translating climate policies within SOE ownership policies and rationales**

Jurisdiction	Existence of climate-related policies explicitly applicable to SOEs	How climate-related policies are translated within SOEs		
		Ownership policy	Individual policies/ expectations/ mandates	General climate laws/policies/ regulations
Australia	•			•
Belgium				•
Brazil				•
Bulgaria				•
Chile				•
Colombia				•
Croatia				•
Czech Republic				•
Estonia	•	•		•
Finland	•	•		•
France	•	•		•
Germany	•	•	•	•
Greece				•
Hungary	•		•	•
Iceland				•
Ireland	•			•
Japan				•
Latvia			•	•
Lithuania	•		•	•
Mexico				•
Netherlands	•	•		•
New Zealand				•

Jurisdiction	Existence of climate-related policies explicitly applicable to SOEs	How climate-related policies are translated within SOEs		
		Ownership policy	Individual policies/ expectations/ mandates	General climate laws/policies/ regulations
Norway	•	•		•
Peru				•
Philippines				•
Singapore				•
Slovak Republic				•
Sweden	•	•		•
Switzerland	•		•	•
United Kingdom			•	•

Source: Author's compilation, based on questionnaire responses and OECD (2021<sup>[33]</sup>), *Ownership and Governance of State-Owned Enterprises: A Compendium of National Practices*, <https://www.oecd.org/corporate/Ownership-and-Governance-of-State-Owned-Enterprises-A-Compendium-of-National-Practices-2021.pdf>.

### *Policy co-ordination on climate*

Further to integrating climate-related policies and expectations, steps are being taken to promote internal co-ordination across government entities and agencies regarding policies related to climate, environment, or low-carbon transition applicable to SOEs. Most jurisdictions (including **Brazil, Chile, Colombia, Iceland, Latvia, Mexico, the Philippines**, and the **Slovak Republic**, among others) reported that co-ordination on climate policies takes place on a broader level, involving relevant ministries and agencies.<sup>23</sup> In cases, such as **Norway** and **Finland**, the ownership entities co-ordinate across ministries and SOEs on climate transition policies applicable to the state-owned sector. In **Sweden**, the government as a whole is involved in decision-making process with regard to policy co-ordination on climate, and priorities are translated by the Ministry of Enterprise and Innovation (as the ownership entity) within the framework of expectations set out in the ownership policy.

Comparably, in **Switzerland**, policy co-ordination involves multiple actors, including line ministries that set broad objectives together with SOEs, as well as the Federal Council and, subsequently the parliament that approves strategic goals, which are set for SOEs every four years (or annually for large SOEs). These goals are linked with the 2030 Sustainable Development Strategy and Action Plan, which are based on the Sustainable Development Goals (SDGs). SOEs are expected to focus on implementing a number of SDGs as part of their strategies and are strongly encouraged to include climate-related objectives. These objectives go through an intergovernmental consultation process, followed by a discussion and approval at the Federal Council.

Furthermore, over one-third of the countries surveyed (including **Australia, Colombia, Croatia, Estonia, France, Hungary, Iceland, Latvia, Mexico, the Netherlands, Norway, the Philippines, the Slovak Republic** and **Switzerland**, among others) reported that SOEs are usually involved in or consulted on developing policies, laws and regulations that are related to climate and sustainable development through standard regulatory consultation procedures. Usually, both SOEs and private companies can participate in such consultations.

## **Box 2.2. Case studies: Translating climate policies within state ownership policies and expectations**

While broader climate-related legal and regulatory frameworks are applicable to SOEs, state owners also outline specific expectations through state ownership and other related policies. These policies are often framed within a wider context of promoting responsible business conduct and sustainable practices. The examples below outline how climate policies are translated within ownership policies and expectations in selected jurisdictions:

### ***Finland***

The government Programme outlines the premise of state ownership policy, which is implemented through a resolution renewed each government term. The resolution on state ownership policy outlines expectations on corporate social responsibility, which covers provisions related to climate. Within the current framework, state-owned companies are required to take into account the government's objective of a carbon neutral Finland by 2035 and the goals of the Paris Agreement to limit the rise in global temperatures to 1.5°C. More broadly, as a shareholder, the state requires that companies integrate corporate social responsibility and sustainability into their business operations and pursue a goal-oriented CSR policy. To ensure proper CSR performance, long-term increase in value and competitiveness, the state expects the companies to analyse the impacts of climate change on their operations and give them due consideration in their strategies. At the same time, companies need to recognise the impacts of their own operations on climate, environment and biodiversity, and establish ambitious goals in this respect compared to their peer companies.

### ***France***

While SOEs are required to meet national and EU climate-related policies, their implementation is more strictly applicable and monitored within the state-owned sector. For example, the country's CSR strategy is applicable to the entire SOE portfolio, focusing on integrating CSR within SOE strategies, rationales and objectives, including outlining carbon footprint and reducing GHG emissions (the latter is monitored through individual SOE action plans). Specific climate-related expectations for SOEs are also identified in the APE's (ownership entity's) CSR charter, which refers to meeting goals under the Paris Agreement and the national climate action plan. More broadly, companies with over EUR 500 million turnover are expected to fulfil commitments to reduce GHGs, which should be set in line with sectoral carbon budgets set by the National Low-Carbon Strategy.

### ***The Netherlands***

In the Netherlands, SOEs are subject to an ownership policy and a specific policy promoting CSR, which is annexed to the ownership policy. The CSR policy covers "responsibility for people, society and the planet," and contains specific requirements for SOEs to evaluate CSR impacts on business activities, to lead on climate, to be informed on national and international initiatives, to understand climate-related risks, and to be aware of opportunities for technological upgrades. This policy identifies three pillars for SOE action, including achieving international best practices (OECD Guidelines, UNGP, UN Global Compact, Corporate Governance Code), uptake of transparency standards (including GRI, UN Guiding Principles Reporting Framework), and identifying concrete CSR objectives. Currently, the ownership policy is being updated and it will include additional components related to sustainability.

**Norway**

The White Paper on ownership policies states that SOEs are expected to have an overarching agenda for sustainable value creation, which balances financial, social and environmental factors. SOEs are also expected to lead the work on responsible business conduct, reduce their climate and environmental footprint, conduct due diligence, and ensure transparency throughout company operations, supply chains and business relationships. Moreover, the policy outlines that SOEs should follow internationally recognised guidelines, including the OECD Guidelines for Multinational Enterprises and the UNGPs, among others.

**Sweden**

Sweden's ownership policy frames climate issues within the context of promoting sustainable business. This concept refers to balancing and integrating economically, socially and environmentally sustainable development, as well as acting responsibly, minimising adverse impacts, and promoting value creation through innovative business models and solutions. Within this context, the ownership policy outlines that the SOEs should promote environmentally sustainable development and set good examples in sectors in which they operate, while achieving environmental and climate objectives outlined under national regulations and the Paris Agreement. Moreover, based on the ownership policy, SOEs have to analyse the Sustainable Development Goals of the 2030 Agenda so as to identify the goals that each enterprise has an impact on and contributes to through its operations. The ownership policy also encourages SOEs to adhere to frameworks, such as the OECD Guidelines for Multinational Enterprises, UNGPs, and the UN Global Compact.

**Switzerland**

State ownership expectations are reflected within the strategic objectives and goals of individual SOEs, which reference broader objectives outlined under the country's 2030 Sustainable Development Strategy. These goals are prepared by line ministries together with the SOEs, after which they go through internal consultation processes within the Federal Government and are discussed by the Federal Council and, subsequently, the parliament, after which these goals are adopted. Following this process, supervisory boards translate these priorities into relevant strategic goals in the companies. SOEs are expected to set targets based on 1-3 SDGs, and are strongly encouraged to consider climate-related aspects. Moreover, SOEs are also expected to align with social, economic and environmental practices outlined in international instruments, including the OECD Guidelines for Multinational Enterprises and the UNGPs.

Source: Author's compilation based on questionnaire responses and OECD (2020<sub>[20]</sub>), *OECD Business and Finance Outlook 2020: Sustainable and Resilient Finance*, <https://doi.org/10.1787/eb61fd29-en>.

## 2.2. Climate policies and exercising state ownership

Further to adopting high-level ownership policies and expectations, state owners can influence low-carbon transition in SOEs through exercising shareholder rights. Based on the SOE Guidelines, the state is expected to act as an informed and active owner, which includes engaging in shareholders' meetings, setting and monitoring implementation of broad SOE mandates and objectives, and establishing a reporting system.<sup>24</sup> At the same time, exercise of ownership rights should be clearly defined and SOEs should have full operational autonomy to achieve their objectives. The following sections examine state owners' role in introducing climate expectations and encouraging SOEs to promote climate policies.

### 2.2.1. State's role in setting and communicating climate expectations in SOEs

#### *State's role in setting climate expectations in SOEs*

While specific role of the state as an owner differs across reporting jurisdictions with regard to promoting climate transition, in most cases, and according to good practice, there is a clear distinction between the role of the state and the role of the supervisory boards. In **Norway**, the state owner sets broad expectations pertaining to climate, sustainability and transparency, as outlined in the ownership policy, while monitoring the company's goal attainment and expectations through dialogue and meetings with supervisory boards. The supervisory boards, in turn, develop concrete measures and targets for companies to meet owner's expectations. Similarly, in **the Netherlands**, SOEs are expected to set their goals based on the state ownership policy, and are asked to identify three to six CSR-related objectives, which are required to be long-term, traceable, and easy to communicate. While climate targets are not mandatory, SOEs usually introduce climate-related goals, particularly where energy transition is a key issue (such as Gasunie and Port of Rotterdam Authority). The state owner reviews these goals and assesses their level of ambition, and similarly to **Norway**, the board is responsible for setting concrete targets.

Other examples include **Finland**, where the state owner expects companies to be responsible for recognising climate-related impacts and setting targets on issues that are material. The state provides an overall ambition for value creation and to factor in ESG issues within risk management, though the SOEs are responsible for reporting on attaining goals through their CSR reports. Moreover, an internal reporting system has been developed by the Ownership Steering Department, which contributes to monitoring climate issues for the portfolio on a quarterly and annual basis. Moreover, in **Sweden**, the shareholder can steer the policy at an overarching level, while expectations exist on promoting responsible business conduct. However, companies are expected to set specific targets, which are monitored through shareholder dialogue. ESG data is also collected from all SOEs annually (including on climate), which are then presented to political leadership and submitted to the parliament. In **Ireland**, SOEs are subject to 2030 emission reduction and energy efficiency improvement targets that have been set for the public sector. Broader expectations regarding how SOEs approach their climate action objectives are reflected in the voluntary Climate Action Framework that has been developed. A number of companies also work with Science Based Targets initiative (SBTi), a non-profit that helps them align with the Paris Agreement and maintain temperature increases within 1.5°C.<sup>25</sup>

Climate-related targets in some jurisdictions can be introduced on a case-by-case basis in companies and if material to their operations. For example, in **Bulgaria**, only certain SOEs are required to set climate-related objectives (such as those operating in the aviation sector). Similarly, in **Lithuania** and the **Philippines**, only SOEs operating in certain sectors (such as energy sector) are required to set climate-related targets. In **Estonia**, requirements are non-specific and each ministry sets expectations and monitors performance, though specific decisions are made with regard to particular SOEs based on their investments and environmental targets. In other cases, while specific requirements to set climate objectives may be absent, SOEs can take initiative. For example, in **Chile**, a number of SOEs have committed themselves to meeting national climate regulations and commitments. Some SOEs have been certified based on ISO standards (including ISO 140 001),<sup>26</sup> while others are part of *HuellaChile* Program, an initiative of the Ministry of Environment to promote quantification, reporting, and management of GHG emissions.

Where introduced, climate-related expectations are typically applicable to fully and majority-owned SOEs. Some jurisdictions pointed out that where the state is a minority shareholder, the state's power can be less decisive in terms of introducing climate-related objectives, but still heard through the exercise of shareholder rights. Some jurisdictions have also started benchmarking performance of SOEs in terms of meeting climate and environmental goals, as further outlined in Box 2.3.



### Box 2.3. Benchmarking climate objectives among SOEs

Some jurisdictions have started benchmarking environmental performance of SOEs either across the portfolio or among peer companies. For example, **France** undertakes peer comparisons in reducing emissions in line with Paris Agreement, as listed companies and large issuers are expected to define their emission reduction objectives. Notably, French Public Investment Bank (BPI France) has adopted policies to assess carbon footprints and promote sustainable finance. Other examples include the national railway operator, SNCF, which has ordered 100 trains that consume 20% less energy compared to its current fleet, and La Poste, which is increasingly using electric vehicles. Moreover, EDF is looking to double renewable energy production by 2030 and to triple storage capacity by 2035. Despite these developments, it is worth noting that APE has also observed disparity between SOEs in terms of individual practices, with some being relatively advanced with regard to incorporating climate transition policies compared to others.

**Austria** uses benchmarking as a tool to understand the performance of certain SOEs with regard to their efforts in promoting climate transition. In particular, ÖBAG, Austria's holding company, oversees a portfolio that includes key state-owned companies in the energy and telecommunications sectors, and in postal services. ÖBAG recently launched efforts to improve ESG monitoring and introduce targets focusing on remuneration policies in these entities. As such, it started a project that benchmarked ESG-related practices with SOE peers in the industry on an international scale. Based on this activity, relevant KPIs were identified for each SOE to monitor their performance and identify areas for improvement. Environmental indicators were confirmed by Science Based Targets initiative and focused mainly on Scope 1 and 2 emissions, though they significantly varied depending on the sector of operation. ÖBAG is currently working towards establishing a monitoring system and is conducting a mapping exercise, which will be made available during the first half of 2022.

Source: MEFR France (2021<sup>[34]</sup>), Plan d'action climat du Ministère de l'Économie, des Finances et de la Relance, France; (OECD, 2020<sup>[20]</sup>), OECD Business and Finance Outlook 2020, <https://doi.org/10.1787/eb61fd29-en>; ÖBAG (2021<sup>[35]</sup>) Interview Responses.

#### *Communicating climate expectations*

A number of jurisdictions use shareholder dialogue as a means to communicate climate expectations with SOE boards. For example, in **Sweden**,<sup>27</sup> **Norway** and **Finland**, ownership entities hold regular discussions with supervisory boards of SOEs. The ownership policy serves as a reference point with regard to climate expectations and discussions are often held on a quarterly basis, during which owner's expectations are also communicated on climate and other sustainability issues. Depending on the SOE and sector of operation, and if climate-related risks are higher, the ownership entities may follow up more frequently with individual companies. These issues can also be discussed during annual meetings, or otherwise through awareness-raising workshops and conferences.

In **France**, APE engages specific board-level committees in SOEs. Expectations are formulated on a case-by-case basis for SOEs in expectation letters following their discussions. In **the Netherlands**, the state owner holds meetings with both supervisory and executive board members (particularly with the latter to understand day-to-day operations with regard to promoting climate transition). The state owner also engages with experts within SOEs.

More broadly and as noted, specific company-level expectations are communicated through owner's expectations. This includes in **the Philippines**, where climate-related expectations are communicated through memoranda and circulars, as well as performance evaluation systems. In **Brazil**, the ownership entity typically communicates climate-related expectations through annual plans, climate change



policies and adaptation, plans, and international commitments (such as NDCs), which are expected to be translated within companies.

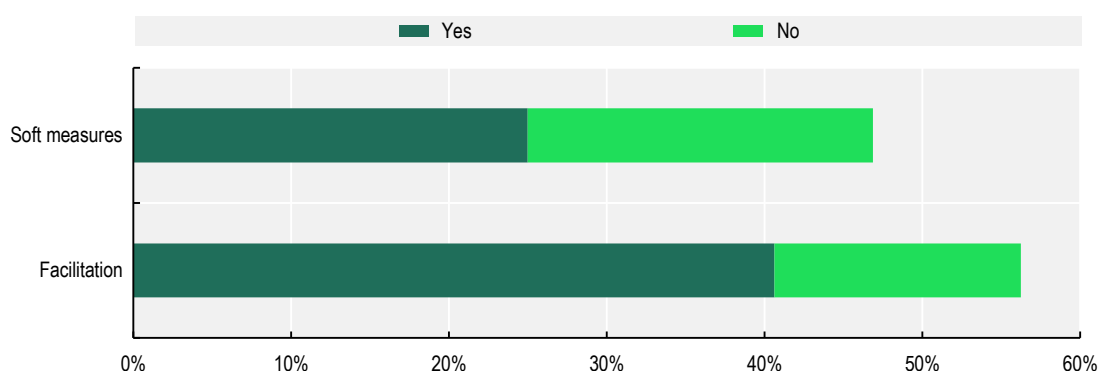
## 2.2.2. Measures to facilitate climate transition in SOEs

### *Measures to facilitate and raise awareness regarding climate transition policies*

To facilitate SOEs' ability to meet climate expectations, approximately half of those surveyed have held capacity-building activities, as well as conferences, seminars and workshops to support awareness-raising among their portfolio companies (Figure 2.1). For example, in **Norway**, the main topic during the 2021 ownership conference was “sustainable value creation – the world at net zero in 2050”. Norway has also arranged climate seminars for SOE management over the last couple of years. Similarly, **Finland** arranges regular CSR and climate seminars for SOE management and supervisory board members, while **the Netherlands** plans on organising seminars for experts on the topic.

State owners may also provide specific training opportunities for SOE boards and executive leadership. For example, in **Croatia**, the **Slovak Republic** and **Mexico**, authorities held workshops for SOEs following the adoption of emissions trading systems. Others, including **Colombia** and **Chile**, have held trainings on climate reporting. In countries, including **Japan** and **Switzerland**, broader instruments have been developed (such as *Climate Change Adaptation Guide* in the former and *Exemplary Energy and Climate Initiative*<sup>28</sup> in the latter) as part of encouraging and raising awareness on low-carbon transition priorities. Moreover, **Peru's** centralised ownership unit works with individual SOEs to provide (i) impact analysis for SOE sustainability programmes, (ii) framework for enhancing sustainability of SOEs, and (iii) technical assistance for SOEs to develop their sustainability programmes (OECD, 2020<sub>[20]</sub>).

**Figure 2.1. Climate-related facilitation mechanisms and soft measures applicable to SOEs in reporting jurisdictions**



Note: “Facilitation mechanisms” in the questionnaire refer to such as through measures, such as trainings, guidance or capacity-building to sensitise SOEs on climate-related matters. Moreover, some governments have put in place supplementary or “soft” incentives (such as awards, recognition, etc.) to promote climate and environmental initiatives, and to advance low-carbon transition in the corporate sector.

Source: Author’s compilation, based on questionnaire responses.

### *Soft measures to promote climate transition*

Approximately a quarter of the state owners surveyed noted that broader governmental initiatives aimed at recognising corporate leadership in the area of CSR (including with regard to climate) are available to SOEs. These measures, however, are often not specific to SOEs, as both state-owned and private companies are encouraged to participate. For example, in **Japan**, the Ministry of Environment has

launched a “good life award”, which is designed to recognise leading practices by various corporate entities, including SOEs. The Ministry of Environment also provides an award for Climate Change Action annually to honour individuals and organisations that have made outstanding achievements in climate change.

Similarly, **Croatia** provides a sustainable development award and **Iceland** provides an environmental performance award, in which SOEs may take part. Other examples include **the Philippines** and **Estonia**, where SOEs may participate in annual award programmes. Comparably, in **Lithuania**, the Governance Co-ordination Centre organises an annual SOE good governance awareness event, which recognises sustainability practices by SOEs. Other jurisdictions have established additional platforms and initiatives in which SOEs may participate. These include **Latvia’s** “sustainability index”<sup>29</sup> and **the Netherlands’** transparency benchmark regarding CSR activities and practices,<sup>30</sup> which is the basis for a Cristal Prize for companies with the best CSR reporting.

## 2.3. SOEs in the marketplace and meeting climate-related expectations

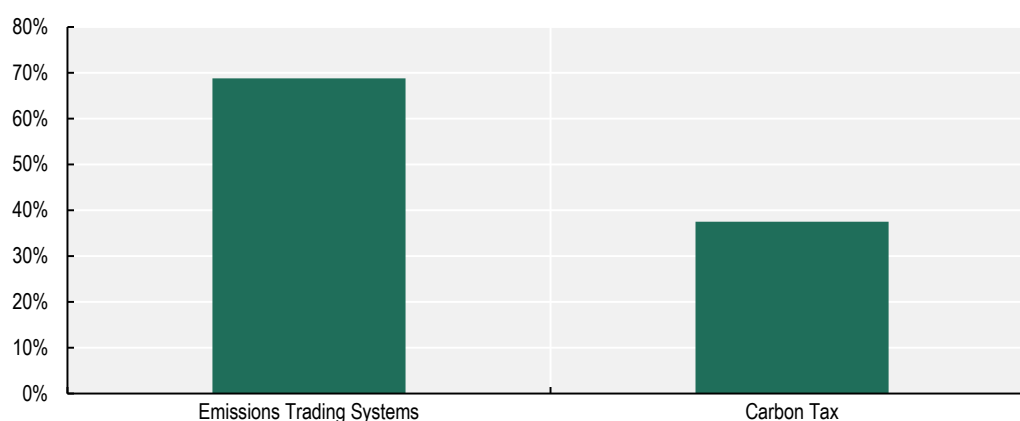
The following section examines the applicability of climate-related market policies on SOEs, including emissions trading systems and carbon pricing, as well as the performance of commercial and non-commercial objectives, and stranded assets.

### 2.3.1. Market mechanisms to support climate transition

#### *Emissions trading systems and carbon pricing*

Most of those surveyed stated that same market instruments to mitigate climate-related challenges are applicable to both SOEs and private companies. Common mechanisms include emissions trading system (ETS) and carbon taxes (as further elaborated under Section 1 and Figure 2.2). The EU ETS was introduced in 2005 and it operates in all reporting EU jurisdictions, as well as **Iceland**, **Norway** and **Liechtenstein**. In 2017, the **EU** and **Switzerland** signed an agreement to link their emissions trading system, which entered into force in 2020, to limit GHG emissions. Further proposals are under consideration on achieving climate neutrality and meeting targets under the Green Deal, which will impact certain SOEs operating in sectors, such as transport and manufacturing (European Commission, n.d.<sup>[12]</sup>). Carbon-pricing policies and mechanisms have reportedly impacted certain SOEs. Notably, until their closure in 2015, coal blocs of **Hungary’s** MVM were supported by the “coal closure fund” to help transition, which was approved by the European Commission. More recently, the Energy Efficiency Obligation System that was introduced in 2021 provides a mechanism to promote energy efficiency, which is operated by the country’s Energy and Public Utility Regulatory Authority.

**Figure 2.2. Emissions trading systems (ETS) and carbon tax availability in reporting jurisdictions**



Source: Author's compilation, based on questionnaire responses.

Similar instruments have also been developed in other countries, which are applicable to both SOEs and private companies. Notably, **Mexico** is currently piloting ETS, which is applicable to entities responsible for 50% of emissions in the country and that are concentrated in industry and certain energy sub-sectors, representing 40% of total GHG emissions in the country. Further to ETS, some reporting jurisdictions have also introduced carbon taxes (which is applicable to both SOEs and private companies), or are in the process of introducing them (such as **Belgium**).

### *Subsidies and support measures*

Support for efficiency upgrades and renewable investments to advance climate transition may be provided through government subsidy schemes and other mechanisms. While government may provide justified state aid to support enterprises with low-carbon investments, this also creates potential considerations with regard to level playing field. A 2018 OECD study found that such support measures should not carry the risk of impeding the entry of other market competitors, nor crowd out funding or innovation emerging from private sector-led initiatives (OECD, 2018<sup>[23]</sup>).

According to most of the respondents, there are no specific subsidies or programmes that are applicable only to SOEs. For example, **Hungary** noted that EU state aid rules currently prevent SOEs from receiving special treatment and that they are free to participate in programmes, such as feed-in tariffs to develop renewables and auction-based systems. In addition, **the Netherlands** has introduced subsidy schemes to accelerate renewable investments and to switch to low-carbon sources, which are applicable to SOEs as well. Comparably, in **the Philippines**, there are specific mandates and preferential packages applicable to SOEs to help advance efforts to combat climate change.

However, in some cases, state aid has been provided to SOEs within the context of COVID-19. For example, to mitigate adverse impacts of the pandemic, **the Netherlands** provided state support to KLM, though with conditions that the company would fulfil certain sustainability goals. Moreover, Sveaskog, an SOE in **Sweden** which is the largest owner of forests, received support packages within the context of the pandemic for its forestry and transport contractors to promote a sustainable forest industry.

Considering that public funding is expected to be channelled increasingly in the coming years to help advance green transition, new policies are currently being developed, which may have implications for the state-owned sector. Notably, the European Commission has developed guidelines on climate, energy and environmental aid. The guidelines are expected to come into force in 2022 and cover areas,

such as providing support for new technologies (such as hydrogen), closure of coal, peat and shale activities, and large airports that qualify for green investment projects. The guidelines focus on economic and financial analysis in assessing compatibility of state aid, as well as on examining climate-related impacts of projects in short and long term (Puglisi, 2021<sup>[36]</sup>).<sup>31</sup>

### 2.3.2. Commercial and non-commercial objectives, and stranded assets

#### *Balancing commercial and non-commercial objectives*

The degree to which SOEs undertake non-commercial objectives and the degree to which SOEs may be insulated from market forces<sup>32</sup> may impact SOE responsiveness to market-based instruments, such as carbon pricing.<sup>33</sup> Among reporting jurisdictions, less than one-fifth highlighted potential challenges and risks resulting from balancing commercial and non-commercial objectives and the ability to meet climate-related objectives. For example, oil and gas companies in some jurisdictions reported challenges in both meeting energy-related public policy objectives and aligning with climate-related requirements. In other cases, certain SOEs operating in carbon-heavy sectors (such as transport and infrastructure) are responsible for performing key public policy objectives (e.g. related to employment and enhancing connectivity), and often find it challenging to meet climate-related targets.

**Sweden** and **Switzerland** emphasised that while their SOEs may have public policy objectives, care is taken to ensure that potential conflicts and contradictions with government's climate-related and SOE expectations are minimised through on-going dialogue between supervisory boards and state owners. Moreover, in **the Netherlands**, the state owner aims to engage SOEs and to have an ongoing dialogue about potential trade-offs between commercial and non-commercial objectives, and to minimise contradictions between climate expectations and ownership policies. These practices, however, vary significantly depending on broader contexts of SOE corporate governance structures, sectors of operation and whether public policy objectives are applicable (for example, six reporting jurisdictions stated that this was not an issue in their portfolios).

In some cases, possible goal conflicts are expected to be mitigated at the company-level. Some examples shared by ownership entities included initiatives by SOEs to invest in renewables, promote energy efficiency measures, and renew their fleets (particularly in the transport sector), while engaging in commercial partnerships to accelerate climate transition. For example, in **Finland**, two companies where the state is a shareholder, namely Neste and Finnair, announced a partnership in 2020 to reduce carbon footprint for flying with sustainable aviation fuels, which will contribute to the latter's long-term target for carbon neutrality (sustainable aviation fuels help reduce CO<sub>2</sub> emissions by up to 80%). Finnish state-owned airport operator Finavia and Neste are also working together to define ways for corporate customers to reduce carbon footprint (Neste, 2020<sup>[37]</sup>; 2021<sup>[38]</sup>).

#### *Stranded assets*

The issue of stranded assets has arguably been less relevant for state owners, primarily because it has been oriented to company-level financial returns, rather than broader economic considerations needing government decisions. However, considerations for stranded asset analysis are gradually becoming more relevant, particularly for the state-owned sector, as it contributes to analysing economic costs and benefits to decide whether fossil fuel investments present long-term risks (Benoit, 2019<sup>[39]</sup>).<sup>34</sup> Some ownership entities have noted that, when material to the SOE portfolio, the assessment of risks related to stranded assets feeds into shareholder assessments of long-term value creation.

In a number of reporting jurisdictions, SOEs involved in fossil fuels, including peat harvesting and coal-powered generation, have had to reduce the use of coal for energy generation, change harvesting processes, and dispose of assets that risk becoming stranded. For example, in 2016, Vattenfall, **Sweden's** state-owned multinational power company, sold its coal assets, citing commitment to

sustainable energy. Comparably, **Finland's** portfolio is not currently exposed to the risk of stranded assets. However, since its energy sector comprises over half of the value of its SOE portfolio, stranded asset risks are being monitored, in view of potential changes to climate targets and evolving regulations (e.g. with regard to EU Taxonomy). Moreover, in **the Netherlands**, certain infrastructure, such as gas pipelines, may become stranded in the long-run and are being monitored by the state owner, while efforts are underway by the concerned SOEs to promote green transition.

In parallel, state-owned financial institutions in a number of jurisdictions have been adjusting the exposure of their portfolios to stranded assets by shifting away from fossil fuels or by directing financing towards sustainable initiatives. Some examples are as follows:

- **Sweden's** SOE portfolio (such as Almi, SBAB, Saminvest and SEK) has specific expectations with regard to environmental performance. Moreover, SEK, the country's export credit corporation, which has been exposed to fossil fuel investments, now has less than 1% of total lending for the fossil fuels industry.
- **The Netherlands'** state-owned financial institutions, including Invest-NL (which also operates as an impact investor) and other sector banks (BNG Bank and NWB Bank), have focused on climate-related funding.
- **Finland's** Development Fund (Finnfund) is not permitted to invest in projects financing fossil fuels.
- **The Philippines'** Land Bank has introduced a green climate fund programme with mechanisms under the UNFCCC and the Paris Agreement, to help reduce GHG emissions.
- **Brazil's** regional and development public banks, such as the Brazilian Development Bank, South Regional Development Bank and Minas Gerais State Development Bank, provide financial support for climate transition efforts across sectors, such as agriculture and infrastructure, as well as decarbonisation credits.
- **Singapore's** Temasek seeks out investments with track records in low carbon intensity and directs funding to support risk capital for technologies that will reduce or eliminate carbon emissions.

## 2.4. Enhancing stakeholder engagement and responsible business conduct

According to the SOE Guidelines, SOEs are expected to observe high standards of responsible business conduct, which includes factoring in climate and environmental considerations. Along with holding a policy dialogue and consultations with stakeholders regarding climate issues, enterprises are also expected to engage and collaborate through judicial and non-judicial grievance mechanisms as needed. This section outlines practices in reporting jurisdictions with regard to SOE alignment with international standards on promoting responsible business conduct (RBC), as well as efforts to enhance stakeholder engagement regarding climate-related issues, engage in judicial and non-judicial grievance mechanisms, and participate in green and low-carbon initiatives.

### 2.4.1. Encouraging international standards to promote responsible conduct

Most of the jurisdictions surveyed have, to an extent, taken steps towards encouraging SOEs to adhere to international standards on promoting RBC, including instruments to support a low-carbon transition. A number of countries, including **Finland**, **Norway** and **Sweden** have cited the need for SOEs to align with the OECD Guidelines for Multinational Enterprises (MNE Guidelines), which is one of the three main instruments on responsible business conduct, along with due diligence guidance (see Box 2.4). Further to a broader RBC framework, the MNE Guidelines highlight the importance of ensuring environmental protection, including the establishment of environmental management systems and monitoring mechanisms within companies. Along with the MNE Guidelines, SOEs may be encouraged to adhere to other instruments, frameworks and standards, including ISO environmental standards,

Task Force on Climate-Related Disclosures (TCFD), GHG Protocol, Sustainable Development Goals (SDGs) and Global Reporting Initiative (GRI), among others (also see Table 2.4 in Section 2.5).

### Box 2.4. OECD Guidelines for Multinational Enterprises

The OECD Guidelines for Multinational Enterprises (MNE Guidelines) provide recommendations to businesses on responsible conduct across areas, such as environment, human rights, industrial and business relations, and consumer protection, among others. To date, 50 countries, including OECD and non-OECD members, have adhered to the Guidelines, which are part of the OECD Declaration on International Investment and Multinational Enterprises.

The MNE Guidelines represent one of the three main instruments that have become key reference points for responsible business conduct, alongside the UN Guiding Principles on Business and Human Rights, and the ILO Tripartite Declaration of Principles concerning Multinational Enterprises and Social Policy. These instruments are aligned with and complement each other, and set global expectations with regard to responsible conduct, including (i) providing framework for all companies; (ii) ensuring common understanding of impact; (iii) conducting due diligence; (iv) ensuring responsible conduct throughout supply chains; and (v) providing access to remedy.

Furthermore, the OECD Due Diligence Guidance for Responsible Business Conduct provides practical support for enterprises in implementing the MNE Guidelines and helps operationalise international RBC instruments. It introduces an RBC due diligence and risk management mechanism, which includes embedding RBC practices within the core of company operations, identifying, preventing and mitigating adverse impacts, engaging in monitoring and evaluation, communicating results, and providing access to remedy. The OECD has also developed guidance to conduct due diligence across specific sectors, including agriculture, minerals, extractives, garment and footwear, and finance, and is currently developing additional instruments to help companies mitigate environmental and climate-related risks.

Source: OECD (2021<sup>[40]</sup>), Responsible Business Conduct Due Diligence Practices in Ukraine's Energy Sector, <https://mneguidelines.oecd.org/responsible-business-conduct-due-diligence-practices-in-ukraine-energy-sector.htm>.

#### 2.4.2. Enhancing stakeholder engagement

Based on the questionnaire responses, a majority of the reporting countries noted that SOEs engage actively with stakeholders (Box 2.5). For example, in **Sweden**, stakeholder co-operation is one of the founding elements in the state ownership policy to ensure that SOEs are leading by example. In **Finland, Norway and France**, SOEs are also expected to hold stakeholder consultations within the context of fulfilling broader objectives to promote responsible business practices.<sup>35</sup> Requirements for stakeholder engagement can be stricter depending on company operations and activities, particularly to comply with specific laws, regulations or requirements, such as carrying out environmental impact assessments and engaging in specific projects requiring permits. For example, in **Estonia**, there is a legal requirement to engage with stakeholders in case there are large-scale investments, such as constructing wind parks. On a broader scale, however, stakeholder engagements are voluntary, albeit strongly encouraged, particularly among large SOEs. In some cases, the use of certain reporting instruments (such as GRI framework that contain relevant provisions) encourage companies to engage with stakeholders.

### Box 2.5. RBC due diligence and stakeholder engagement

According to the OECD RBC Due Diligence Guidance, stakeholders are individuals or groups whose interests are or could be impacted by an enterprise's activities. While stakeholders differ depending on the enterprise and its activities, some examples include communities at local, regional or national level; worker or employees, including those within supply chains and trade unions; and consumers or end-users of products. Other parties to ensure meaningful engagement may include NGOs or CSOs, industry peers, host governments, investors/shareholders, or business partners.

As part of ensuring responsible conduct and mitigating risks, enterprises are expected to take into account the interests of stakeholders that have been (or could potentially be) impacted by a company's activities. A key component is ensuring "meaningful stakeholder engagement" – that is, an interactive process involving two-way communication and depending on good faith of participants on both sides. Engagement is considered to be important throughout the due diligence process, particularly if an enterprise is involved in:

- Identifying actual or potential adverse impacts in the context of its own activities.
- Engaging in assessment of business relationships with respect to real or potential adverse impacts.
- Devising prevention and mitigation responses to risks of adverse impacts caused or contributed to by the enterprise.
- Identifying forms of remedy for adverse impacts caused or contributed to by the enterprise and when designing processes to enable remediation.
- Tracking and communicating on how actual or potential social impacts are being addressed.

Source: OECD (2018<sup>[41]</sup>), OECD Due Diligence Guidance for Responsible Business Conduct, <https://mneguidelines.oecd.org/due-diligence-guidance-for-responsible-business-conduct.htm>.

### 2.4.3. Judicial and non-judicial grievance mechanisms

Within the context of stakeholder engagement, most of those surveyed allow for both judicial and non-judicial grievance mechanisms to deal with climate-related issues in which SOEs may be involved. In most cases, there are no specific requirements in place for SOEs, as they are usually subject to same treatment as private companies, and cases can be brought to court as needed related to potential environmental violations (as noted in the forthcoming OECD issues paper *Climate change and corporate governance*, the corporate sector has witnessed a significant surge in environmental litigation, which in some case also have been applicable to SOEs) (OECD, 2022<sup>[32]</sup>). Some reporting jurisdictions have noted that SOEs have faced litigation with regard to environmental degradation (such as pollution and water discharge), timelines for coal plant closures and investments by state-owned companies in fossil fuels, among other areas. Some countries, including **Norway**, have cited the use of National Contact Points (NCPs) as a non-judicial mechanism to address non-observance of responsible business conduct by SOEs and private companies (all adherents to the MNE Guidelines have established NCPs, which can serve as a non-judicial grievance mechanisms for climate-related matters).

### 2.4.4. Green public-private partnerships and CSR initiatives involving SOEs

Among those surveyed, over one-third identified the prevalence of green co-operative projects and public-private partnerships in which SOEs are engaged. A number of projects focus on achieving low-



carbon transition within the energy sector, such as advancing efficiency measures, particularly in **the Netherlands, Lithuania and Norway**. For example, SOEs are involved in developing hydrogen supply chains, as well as carbon-capture and storage facilities. Moreover, **Chile** has been working towards advancing sustainable mining, while SOEs in **Sweden** have been looking to produce a CO<sub>2</sub>-free iron for steel production (see Box 2.6). Further to promoting green practices, SOEs in reporting jurisdictions have been engaged in collaborative projects to enhance knowledge sharing. This includes **Iceland's** platform Festa to increase knowledge about CSR practices, while **Lithuania's** Ignitis has been actively engaged in raising awareness regarding energy innovation, renewables, efficiency measures and climate change. Specific examples of green co-operative projects and initiatives within selected jurisdictions are outlined in Table 2.2.

### Box 2.6. Case study: HYBRIT initiative in Sweden

Hydrogen Breakthrough Ironmaking Technology, known as HYBRIT, is an initiative that was launched in Sweden in 2016 intending to revolutionise iron and steel industry by developing a fossil-free value chain for iron and steel production using fossil-free electricity and hydrogen, thus minimising CO<sub>2</sub> emissions throughout the value chain. The project was initiated by Vattenfall, Sweden's state-owned multinational power company, along with SSAB, a global steel company, and LKAB, which is currently working on innovative and competitive mining and processing of iron ore and minerals to produce climate friendly products. The initiative also receives financial support from the Swedish Energy Agency.

HYBRIT technology involves replacing blast furnace process, which includes using carbon and coke to remove the oxygen from iron ore, with a reduction process where fossil-fuel free hydrogen produced from water using electricity from fossil-free energy sources. In 2020, HYBRIT introduced its pilot direct reduction plant, which included an experimental development of a process to reduce iron ore using fossil-free hydrogen. It is currently planning to build an underground hydrogen storage facility, which will be operational from 2022 to 2024. Further trials include pellet production with non-fossil fuels and a demonstration plant which will be commissioned in 2025.

Source: HYBRIT, (n.d.<sup>[42]</sup>), A fossil-free future, <https://www.hybritdevelopment.se/en/a-fossil-free-future/>.

**Table 2.2. Examples of green co-operative projects within selected jurisdictions**

Jurisdiction	Brief description
<b>Chile</b>	Certain entities, including Arica, Iquique, San Antonio and Talcahuano – San Vicente Port Companies have established clean production agreements, which are public-private partnerships to promote clean production through specific goals and targets. In addition, port companies (including Arica, Antofagasta and San Antonio) are part of the HuellaChile Program, which seeks to improve quantification, reporting and management/reduction of GHG emissions. Moreover, Codelco (SOE) and PHP Billiton have been engaged in an initiative since 2010 to promote sustainable mining.
<b>Colombia</b>	Partnerships include efforts to achieve technical, financial and legal studies to further define renewable energy programmes (involving FDN and Ministry of Energy and Mines); to improve alternative bay channels through work, consultations and licensing (INVIAS-Cartagena's Port Society, Conectar and Ecopetrol partnership involving FDN); and to advance public lighting through energy efficiency measures (IDB-GEF partnership involving Findeter).
<b>Estonia</b>	Eesti Energia is currently involved in the OSAMAT project, which focuses on recycling oil shale ash for civil engineering. The objectives of the project include fostering partnerships, disseminating know-how, and promoting economic benefits while factoring in environmental considerations in engineering projects.
<b>Hungary</b>	MVM Group has a programme called Edison start up competition, which helps start-ups engage in projects, including with regard to promoting innovative energy solutions.
<b>Iceland</b>	A number of Iceland's SOEs founded Festa (festa.is), which promotes increased knowledge about CSR and sustainability, with a focus on SDGs and climate change. Some SOEs also founded the Iceland Sustainable Investment Forum, which has an agenda to promote sustainable investment practices.



Jurisdiction	Brief description
Japan	Japan Tobacco, in partnership with local tobacco growers, government and NGOs, has invested in projects to improve forest management and sustainable wood supply. These can include investments abroad, such as the promotion of Agroforestry programmes in Malawi and Zambia. NAA has been administering an Eco-Airport Development and Planning Council, which engages stakeholders to discuss environmental issues and public-private collaboration, while considering actions to target climate change and reduce CO <sub>2</sub> emissions. Moreover, Hokkaido Railway has been involved with nine private companies to develop a green hydrogen supply chain, and Shikoku Railway has engaged with the New Energy and Industrial Technology Development Organisation in updating its railcars to improve environmental performance.
Latvia	Projects include introducing electric buses in public transportation, which involves participation of SOEs and private partners. This project will also involve developing electric bus charging stations.
Lithuania	Ignitis, a state-controlled energy holding company, has been collaborating with the country's transmission system operator Litgrid and Fusebox OU (private company) in piloting a project on grid optimisation and expansion of renewables. This will allow Ignitis to automatically control the power of charging stations and provide grid flexibility. Ignitis has also been engaged in further partnerships to establish a platform for solar park developers and vendors, as well as with distribution system operators to develop projects combining solar plant generation and storage units. Furthermore, Ignitis has been involved in educational partnerships to advance knowledge on energy innovation, renewables, efficiency and climate change.
Netherlands	Porthos project on carbon capture and storage is underway, which aims to transport CO <sub>2</sub> from industry in the Port of Rotterdam Authority and store it in empty gas fields beneath the North Sea. The main transport and storage infrastructure is being developed by Gasunie, EBN and Port of Rotterdam Authority, all partly state-owned. Other projects include WarmteInQ, a heat network project involving the Port of Rotterdam Authority and Gasunie, where residual heat is delivered to consumers. The Netherlands is also engaged in converting parts of the main natural gas network into a hydrogen network, in which Gasunie is involved.
Norway	Equinor received funding from Enova in 2019 to develop the world's largest floating wind power farm.
Singapore (Temasek)	As part of its commitment to accelerate decarbonisation efforts, in 2021 Temasek was a founding investment partner to the Brookfield Global Transition Fund – the largest fund focused on the global transition to a net-zero economy. Temasek has also committed significant capital to, while strategically investing alongside, the Fund. Further ventures include Climate Impact X, a global exchange and marketplace for high quality carbon credits, as well as partnerships to support climate innovators to improve ESG monitoring and verification, and to develop a knowledge database on blue carbon.
Sweden	SOE LKAB (a mining company) is engaged in developing a CO <sub>2</sub> -free iron for steel production, as further elaborated in Box 2.6. SOE "SEK" (Swedish Export Credit Corporation) is also collaborating the agency "EKN" (The Swedish Export Credit Agency) on advancing climate matters in the export system. Moreover, a number of Swedish SOEs are involved in collaborative projects with RISE, which is a research institute on industry and innovation, and looks to promote sustainable growth.

Source: Author's compilation, based on questionnaire responses.

## 2.5. Climate transparency and disclosure in SOEs

This section outlines climate transparency and disclosure practices in SOEs within reporting jurisdictions, including on an aggregate level and by individual SOEs.

### 2.5.1. Outlining climate-related issues in annual aggregate reporting

In recent years, an increasing number of state owners have expanded the coverage of their annual aggregate reporting to include non-financial information. Among those surveyed, over two-fifths reported that they include climate-related information in annual reports (or other reporting forms, as applicable), though specific practices and the level of detail can vary (as further outlined in Table 2.3). For example, **Norway's** 2020 annual report covers specific details with regard to carbon emission from SOEs, an overview of non-financial reporting standards, and information regarding each SOE's plan for sustainable value creation. Moreover, there are ongoing efforts to improve company reporting on attaining climate goals.

Similar information has been covered in annual reports issued by **Sweden**, while **France** and **Iceland** have recently started incorporating climate-related information in their ownership reports. **Finland** is currently upgrading its annual aggregate report to include more detailed climate reporting. In 2021, it gathered information on SOE carbon footprints, which will be made available in the aggregate report.

In case of absence of aggregate reporting, there still may be public disclosure on how SOE portfolios are aligning with broader government climate commitments. For example, **the UK** discloses how arm's length bodies, including certain commercial SOEs within the UKGI portfolio, will help achieve net zero emissions through Green Government commitments. In other countries, climate-related information is either not disclosed for individual companies or is done on an *ad hoc* basis. For example, SOEs in **Mexico** are required to present a public report to the ownership entities, though environmental issues are not always considered. Similarly, in **Japan**, some of its largest state-owned entities, such as Japan Tobacco and Narita International Airport Corporation, have started reporting on their policies, strategies, targets and activities regarding their environmental risks and opportunities.

Further to annual aggregate reports, information regarding emissions may also be monitored and disclosed through other means. For example, within EU economies, a centralised Union Registry serves to outline allowances under the EU ETS.<sup>36</sup> Similarly, in **Mexico**, some SOEs provide information regarding their CO<sub>2</sub> emissions for the country's national emissions registry. Moreover, in certain jurisdictions, forms of portfolio-level monitoring and information gathering can be initiated. For example, in 2017, **Norway** engaged an independent third party to conduct a study and develop a report to analyse the performance of several SOEs in the country as part of identifying climate risks in the SOE portfolio (see Box 2.7). Moreover, **Sweden** has also used independent third parties to carry out climate analysis for its SOE portfolio in 2015 and 2020, focusing on direct emissions of SOEs and assessing whether their strategies were in line with the Paris Agreement, with a follow-up study planned for 2022.

### Box 2.7. Case study: identifying climate risks in Norway's SOE portfolio

In 2017, the Norwegian centralised ownership entity in the Norwegian Ministry of Trade, Industry and Fisheries, in collaboration with other ministries, commissioned a third-party service provider, to undertake a study to understand how the state owner is exposed to climate risks through its partial or full ownership of 37 companies selected for the study. The assessor was also asked to assess how the companies met the government's expectations regarding climate and environment. The assessment focused on their performance, transparency, risk and opportunity understanding, and emission reduction. The assessment was used as part of building capacity and knowledge base in the centralised ownership entity and awareness raising. Based on the key findings:

- The portfolio of 37 Norwegian companies owned fully or partially by the state recorded 53.75 million tonnes CO<sub>2</sub> equivalent (scope 1 and 2) and a carbon intensity of 32.43 tonnes CO<sub>2</sub> equivalent per NOK 1 million of revenue. 21 companies reported their carbon emissions and 11 companies provided energy and other consumption data used to calculate emissions. Five companies accounted for 92% of the total emissions in the portfolio.
- Most companies reported a carbon intensity in line with or better than their respective sector averages, with 39% of those that disclose emissions data reporting decreasing emissions over the last few years.
- All companies reflected high levels of transparency, with larger companies providing higher quality information as they were listed on stock exchange and were required to produce annual reports incorporating information on climate risks. 35% of the companies, however, did not publish any information on climate risks.
- Companies with mainly commercial objectives (representing 58% of the portfolio) reported having strategic plans to respond to climate change. Smaller companies or those with other policy objectives were generally less flexible to adapt their business model to reap potential opportunities.

- All listed companies performed in line with their sector or led by example in terms of performance, risk understanding and reduction, and transparency. Only a several listed companies performed below standard practices, and listed companies performed better than non-listed companies across other themes.
- Companies with high carbon intensity performed in line with sector-standard practices in terms of performance, risk understanding and reduction. In terms of opportunity, they performed below standard practice and were leading by example in terms of transparency.
- A small number of companies with medium-sized footprint followed leading examples in terms of performance, risk understanding and opportunity, though practices varied in terms of risk reduction. Those with low-carbon intensity followed standard practices across these themes.

Source: Trucost, (2017<sup>[43]</sup>), The Norwegian state's direct ownership of companies: Climate-related risks, <https://www.regjeringen.no/contentassets/17c99572d12349329f79386e5169b2cc/rapport-om-klima-og-miljo-i-det-statlige-eierskapet.pdf>.

**Table 2.3. Reporting practices and climate disclosure by country**

Jurisdiction	Ownership model	Aggregate reporting practices								Coverage of climate-related information regarding SOEs	
		Report type	Portfolio coverage	Implementation of state ownership policy	Portfolio size and sectoral distribution	Reporting on individual SOEs	Aggregate Financial performance	Key financial indicators	Key non-financial indicators	Aggregate/ownership entity reports	Available through individual SOE reports
Argentina	Decentralised	Ad hoc reporting to parliament			○		○				
Australia	Dual	Online inventory									●
Brazil	Twin-track/dual	Aggregate report and online inventory			●	●	●	○	●		
Bulgaria	Co-ordination agency	Aggregate report									●
Chile	Centralised (subset of portfolio)	Aggregate report	Partial portfolio		●	●	●	●	●		●
Colombia	Centralised (subset of portfolio)	Aggregate report							●	○	
Costa Rica	Co-ordination agency	Aggregate report	Full portfolio	●	●	●	●	●	○		
Croatia	Decentralised (subset of portfolio)	Aggregate report	Partial portfolio								●

Jurisdiction	Ownership model	Aggregate reporting practices								Coverage of climate-related information regarding SOEs	
		Report type	Portfolio coverage	Implementation of state ownership policy	Portfolio size and sectoral distribution	Reporting on individual SOEs	Aggregate Financial performance	Key financial indicators	Key non-financial indicators	Aggregate/ ownership entity reports	Available through individual SOE reports
<b>Estonia</b>	Twin track/dual	Aggregate report	Full portfolio	●	●		●	●	○	○	
<b>Finland</b>	Centralised	Aggregate report	Full portfolio	●	●	●	●	●	●	●	●
<b>France</b>	Centralised (subset of portfolio)	Aggregate report		●	●	●	●	●	●	●	●
<b>Germany</b>	Decentralised	Aggregate report	Full portfolio	○	●	●	●	○	●	●	
<b>Greece</b>	Centralised (subset of portfolio)	Annual report published by the Hellenic Corporation of Assets and Participation; Financial Report issued by Ministry of Finance.								●	
<b>Hungary</b>	Decentralised	Aggregate report				●	●				
<b>Iceland</b>			N/A		●	●				●	●
<b>Ireland</b>	Centralised (subset of portfolio)	Aggregate report	Partial portfolio		●	●	●	●	●		
<b>Japan</b>	Decentralised	Aggregate report	Full portfolio	●	●		●				○
<b>Latvia</b>	Co-ordination agency	Aggregate report	Full portfolio	●	●	●	●	●	○		○
<b>Lithuania</b>	Co-ordination agency	Aggregate report	Full portfolio	●	●	●	●	●	●		●
<b>Mexico</b>											●
<b>Netherlands</b>	Centralised (subset of portfolio)	Aggregate report	Full portfolio	●	●	●	●	●	●		●
<b>New Zealand</b>											
<b>Norway</b>	Centralised	Aggregate report	Full portfolio	●	○	●	●	●	●	●	●
<b>Philippines</b>	Co-ordination agency	Aggregate report	Partial portfolio							○	○
<b>Slovak Republic</b>	Decentralised	Ad hoc reporting to parliament		○	○		●		○		●
<b>Sweden</b>	Centralised	Aggregate report	Full portfolio	●	●	●	●	●	●	●	●

Jurisdiction	Ownership model	Aggregate reporting practices								Coverage of climate-related information regarding SOEs	
		Aggregate report	Full portfolio	●	●	●	○	●	●		
Switzerland	Twin-track/dual	Aggregate report	Full portfolio	●	●	●	○	●	●	●	●

Note: Table has been adapted from the report *Transparency and Disclosure Practices of State-Owned Enterprises and their Owners* (2019) and *Good Practice Guide for Annual Aggregate Reporting on SOEs* (2021) (OECD, 2020<sup>[44]</sup>; 2022<sup>[45]</sup>). It further integrates information provided through questionnaire responses. ●-introduced, ○-partially introduced.

Source: Author's compilation, based on questionnaire responses OECD, *Transparency and disclosure practices of state-owned enterprises and their owners*, <https://www.oecd.org/corporate/Transparency-Disclosure-Practices-SOEs.pdf>; *Good practice guide for annual aggregate reporting on SOEs*, <https://www.oecd.org/corporate/ca/Monitoring-performance-state-owned-enterprises-good-practice-guide-annual-aggregate-reporting-2022.pdf> (2020<sup>[44]</sup>; 2022<sup>[45]</sup>).

## 2.5.2. Climate-related reporting and disclosure by individual SOEs

A growing number of SOEs are beginning to implement climate-related non-financial reporting and often on a voluntary basis.<sup>37</sup> One of the main obstacles is a lack of universal non-financial disclosure standards, though steps are being taken to align practices, particularly with the recommendations of Taskforce on Climate-related Financial Disclosure (TCFD) (see Table 2.4) (OECD, 2022<sup>[32]</sup>).

**Table 2.4. Summary of selected climate reporting frameworks**

Institution	System	Level of detail	Materiality	Audience	Issues
<a href="#">FSB's TCFD</a>	TCFD recommendations	Principles-based <sup>1</sup>	Financially material	Investors, lenders and insurance underwriters	Climate-related issues
IFRS Foundation – <a href="#">International Sustainability Standards Board</a> (ISSB) <sup>2</sup>	IFRS Sustainability Standards <sup>2</sup>	Detailed information	Financially material	Investors	Initial focus on climate-related issues, but with a plan to cover a great number of ESG issues
Value Reporting Foundation – <a href="#">SASB Standards Board</a> <sup>3</sup>	SASB Standards	Detailed information	Financially material	Investors	A great number of ESG issues, with subset of standards in each of 77 industries
Value Reporting Foundation – <a href="#">Integrated Reporting Framework Board</a> <sup>3</sup>	<IR> Framework	Principles-based	Financially material	Investors	A great number of ESG issues
<a href="#">Global Sustainability Standards Board</a> (GSSB)	GRI Standards	Detailed information	Double materiality	Multiple stakeholders	A great number of ESG issues, with a plan to have a subset of standards in each of 40 sectors
<a href="#">GHG Protocol</a>	GHG Protocol Corporate Standards	Detailed information	-4	-4	GHG emissions <sup>4</sup>
<a href="#">CDP</a> (previously "Carbon Disclosure Project")	CDP's questionnaires <sup>5</sup>	Detailed information	-5	Investors and customers	Climate change, forests and water security <sup>5</sup>
<a href="#">Climate Disclosure Standards Board</a> (CDSB) <sup>6</sup>	CDSB Framework	Principles-based	Financially material and relevant <sup>7</sup>	Investors	Environmental information

## Notes:

1: While TCFD's recommendations (TCFD, 2017<sup>[46]</sup>) are indeed principles-based, the Task Force has published a number of documents providing detailed guidance on how to better comply with its recommendations, such as the report "Guidance on Scenario Analysis for Non-Financial Companies" (TCFD, 2020<sup>[47]</sup>). To some extent, therefore, this set of recommendations and guidance documents would together demand "detailed information" according to the classification in the third column of this table.

2: IFRS Foundation announced in November 2021 the formation of the International Sustainability Standards Board (ISSB), which will sit alongside the International Accounting Standards Board (IASB), to set IFRS Sustainability Disclosure Standards. IFRS Foundation's recently amended constitution provides that IFRS Sustainability Disclosure Standards "are intended to result in the provision of high-quality, transparent and comparable information [...] in sustainability disclosures that is useful to investors and other participants in the world's capital markets in making economic decisions" (item 2.a).

3: SASB Standards Board and Integrated Reporting Framework Board (<IR> Framework Board) merged in June 2021. Currently, both standard-setting boards are supervised by a newly created organisation called Value Reporting Foundation Board (VRF). In November 2021, the VRF committed to consolidate into the recently created ISSB by June 2022.

4: GHG Protocol's corporate accounting and reporting standard provides requirements and guidance for companies preparing a corporate-level GHG emissions inventory. It does not adopt a materiality concept, and other ESG reporting frameworks and standards will typically either require or allow GHG emissions to be disclosed according to GHG Protocol's standard. In this standard, GHG emissions are classified under three categories: Scope 1 (direct emissions from a company's own operations); Scope 2 (emissions from purchased or acquired electricity, steam, heat and cooling); Scope 3 (the entire chain emissions impact from the goods the company purchases to the products it sells).

5: CDP's questionnaires would not be considered a reporting framework or standard in the traditional sense, but the institution offers a widely-used system for companies to answer to any of the following questionnaires: Climate Change; Forests; Water Security. The questionnaires are meant to be disclosed to (i) investors or to (ii) customers interested in assessing the environmental impact of their supply chain. Corporate management is not supposed to make a materiality assessment of the information to disclose, because CDP offers a set of questions by economic sector and companies have strong incentives to answer all of them in order to receive better scorings calculated by CDP's system. Questionnaires are shortened only for companies with an annual revenue of less than EUR/USD 250 million and corporates answering the questionnaire for the first time.

6: CDP provides the Secretariat for CDSB. In November 2021, the CDSB committed to consolidate into the recently created ISSB by June 2022.

7: According to the CDSB Framework, environmental information should be disclosed if financially material or relevant. "Relevant" in this context would be information that might be financially material at some point, while the link between the information and future cash flows is not evident. In either case, GHG emissions shall be reported in all cases regardless of management's assessment of their materiality or relevance (CDSB, 2019<sup>[48]</sup>).

Source: OECD (2022<sup>[32]</sup>), Climate Change and Corporate Governance, <https://doi.org/10.1787/272d85c3-en>.

Approximately four-fifths of reporting jurisdictions specified that climate-related non-financial reporting bearing on climate issues if material to the company is either required or strongly encouraged in SOEs.<sup>38</sup> Often such requirements fall under a broader framework, rather than specific laws or regulations targeted at SOEs. Notably, in the EU countries, large and public interest enterprises have an obligation to submit non-financial reports in accordance with the European non-financial reporting directive, which also cover environmental issues. In preparing non-financial reports, enterprises may rely on national, EU, international or other non-binding guidelines to report on non-financial information.<sup>39</sup> Comparably, in **Sweden**, the expectations related to climate disclosure are stricter for SOEs. Notably, while in Sweden companies with over 250 employees are expected to submit non-financial reports, these requirements are applicable to all SOEs. In other jurisdictions, practices are typically enforced in large SOEs, with specific examples outlined in Table 2.5.<sup>40</sup>

In some cases, there are no disclosure requirements and SOEs voluntarily issue sustainability reports that also cover climate-related issues. While there are no climate-related disclosure requirements for SOEs in **Mexico**, certain SOEs, such as Pemex, issue sustainability reports covering climate-related information. Furthermore, **Colombia's** Ministry of Finance encourages SOEs to adopt relevant reporting guidelines and environmental policies, and most of the majority-owned SOEs issue sustainability reports. Table 2.6 summarises climate reporting and disclosure practices among SOEs in reporting jurisdictions.



**Table 2.5. Selected jurisdictions where SOEs are subject to climate reporting requirements (as reported by ownership entities)**

	Large/economically important SOEs	Medium/Small SOEs
<b>Climate-related objectives and their fulfilment</b>	Finland, Iceland, Lithuania, Colombia (encouraged), the Netherlands (some SOEs), Switzerland, Japan (some SOEs, including JT, NAA, Tokyo Metro, JR Hokkaido, JR Shikoku, JR Freight)	Finland, Iceland (encourage), Colombia (encouraged), the Netherlands (encouraged)
<b>Climate-related costs, funding arrangements and financial assistance measures</b>	Iceland (encouraged), Colombia (encouraged), the Netherlands (varies by SOEs), Japan (some SOEs, including JT)	Colombia (encouraged), the Netherlands (varies by SOEs)
<b>Climate-related policies and implementation processes</b>	Iceland, Lithuania, Colombia (encouraged), the Netherlands (encouraged), Switzerland, Japan (some SOEs, including JT, NAA, Tokyo Metro, JR Freight)	Iceland, the Netherlands (encouraged)
<b>Where applicable, climate-based remuneration and incentives for board and management</b>	Finland, Colombia (encouraged), Japan (some, including JT)	Finland
<b>Foreseeable environmental and climate-related risks factors, and measures taken to manage such risks</b>	Finland, Iceland (encouraged), Lithuania, Colombia (encouraged), the Netherlands (varies by SOEs), Switzerland, Japan (some SOEs, including JT, NAA)	Finland, Colombia (encouraged)
<b>Issues related to relevant stakeholders</b>	Iceland (depending on size of impact), Colombia (encouraged), Switzerland, Japan (some SOEs, including NAA)	Iceland (encouraged)

Source: Author's compilation, based on questionnaire responses.

Climate reporting practices, however, significantly vary between reporting jurisdictions and individual SOEs, as currently there is no single standard that is used. One of the most common frameworks is GRI. For example, in **Peru**, companies under FONAFE (the entity responsible for regulating and co-ordinating State corporate activity) are expected to issue annual sustainability reports using the GRI framework.<sup>41</sup> Similarly, in **Hungary**, MVM's annual integrated report discloses and analyses climate-related information using the GRI framework, while broader ESG framework and strategy are under development. In other cases, however, the applicability of specific standards can vary between SOEs. For example, in **Japan**, while one SOE endorses and adopts TCFD for climate disclosure and uses various guidelines (including IIRC, SASB and GRI), other SOEs may use different frameworks.

Other common standards mentioned in questionnaire responses included SASB, EU guidance, or other national and international non-binding guidelines. Notably, **Norway's** 2020 ownership report highlights the SOEs' use of integrated reporting, GHG Protocol, GRI Standards and TCFD. In **the Netherlands**, there is no single policy on climate disclosure that is applicable to the SOE sectors, though most use GRI framework (which includes emission reporting and materiality analysis). Banks are also encouraged to report on climate risks through annual and, if they are material, through financial reports. Moreover, SOEs that adhere to international standards (such as ISO 14 001) may request audits or assurances from independent auditors. The development of internationally recognised sustainability reporting standards is a rapidly evolving field, including to ensure the standardisation, comparability and auditability of reporting and disclosure by companies (OECD, 2022<sup>[32]</sup>).

While multiple standards exist, steps are being taken to further streamline practices of climate reporting and disclosure. The European Commission looks to develop mandatory sustainability reporting standards, which would be introduced within a broader context of the EU action plan to finance sustainability goals and to meet requirements under the EU Green Deal.<sup>42</sup> Further to climate-related disclosure, a few countries are exploring regulating climate-related disclosures as material to the company, though, as the regulatory developments are evolving, it is not yet evident to which extent such reporting requirements would be relevant/different for SOEs impacted by the regulations (OECD,

2022<sup>[32]</sup>). It should be noted that a number of SOEs across reporting jurisdictions are already applying climate-related aspects into their financial reporting and as material to their operations.

**Table 2.6. Description of climate reporting and disclosure practices in reporting jurisdictions**

<b>Jurisdiction</b>	<b>Brief description</b>
<b>Australia</b>	Australian SOEs report on their environmental and sustainability practices through corporate plans and their annual reports, which are available through the government's Transparency Portal. More broadly, there is no legal requirement for sustainability reporting, though there are obligations in terms of providing financial and non-financial information in a number of areas (which may include coverage of environmental issues).
<b>Belgium</b>	SOEs are typically subject to reporting and disclosing climate-related, environmental and other non-financial information under EU regulations.
<b>Brazil</b>	Public companies are required to report on and issue integrated annual or sustainability reports. State agencies and licensing units may also perform environmental audits in SOEs. Brazil has also established a national emissions registry system, which is used to prepare an inventory outlined under the UNFCCC. Companies in certain sectors (such as refrigeration and polyurethane foam production) consuming substances that deplete the ozone layer, are required to annually report their consumption of carbon, hydrogen, chlorine and fluorine. The country also monitors national supply of biofuels and collects data on reduction of GHG emissions for fuel trading, and engages in forest management certification.
<b>Bulgaria</b>	Certain SOEs are required to report and disclose climate-related information, particularly if they hold GHG emission permits under EU requirements and national regulations. Reports are subject to further verification and submission to the European Environmental Agency for Verification and Publication. Within this context, audits may also be carried out to verify information. Broader disclosure requirements are also applicable under EU regulations.
<b>Chile</b>	SOEs are subject to the same disclosure requirements introduced by the Financing Markets Commission, under which public companies should disclose non-financial information (requirements do not vary across SOEs). SOEs typically use GRI framework in non-financial reporting.
<b>Colombia</b>	SOEs are encouraged to report on environmental issues and low-carbon transition, and most majority-owned SOEs have adopted such standards.
<b>Croatia</b>	Climate reporting and disclosure requirements for SOEs fall under EU regulations. In addition, information regarding GHG emissions is disclosed for SOEs under EU ETS. Some SOEs will also be expected to implement Eco-Management and Audit Scheme in the country, which still needs to be put into practice.
<b>Estonia</b>	General EU requirements on non-financial disclosure are applicable. In addition, according to the State Assets Act, SOEs must include an observance of good practices of their company management in their annual reports. Within this framework, the management may include some data related to climate and environment, and in the future, they will also need to follow CSR principles. Moreover, based on the energy sector organisation act, large SOEs are expected to carry out environmental audits every four years. Currently this concerns eight SOEs and three daughter companies, as well as other large enterprises with over 250 employees, EUR 50 million turnover and EUR 43 million in assets. Environmental data is also disclosed for all companies that have permits, though this is applicable to both SOEs and private companies.
<b>Finland</b>	General EU requirements on non-financial disclosure are applicable and companies are required to report on their CSR performance and sustainability in their annual or CSR reports, often using GRI or TCFD. Carbon footprint data is collected for SOEs cumulatively and will be made available after 2021. SOEs are to report on the impacts of climate change on their operations, the climate objectives and actions taken, as well as on the attainment of other key CSR objectives to the annual general meeting of shareholders.
<b>France</b>	SOEs are required to disclose climate-related information based on EU requirements, and many use mechanisms, including GRI and SASB. Climate data may also be reported through other platforms, such as BEGES or DPEF. Environmental audits may also be carried out by an independent body, though this practice is not specific to SOEs.
<b>Germany</b>	Non-financial reporting and disclosure requirements are enforced under the EU directive and the German Sustainability Code, which provides an instrument for companies for their CSR performance.
<b>Hungary</b>	General EU requirements on non-financial disclosure are applicable and entities, such as MVM, submit their annual reporting based on GRI framework. Since 2000s, it prepares reports on environment and sustainability on an annual basis. This helps monitor MVM's sustainability performance. Moreover, regular internal and external environmental audits are performed based on ISO as applicable, with further requirements introduced for permits issued by authorities (for example, with regard to emissions). Furthermore, data on emissions are made available publicly under the EU Transaction Log for companies that fall under the EU ETS Scheme.
<b>Iceland</b>	Environmental agency is responsible for supervising climate performance, including for SOEs. Frequently, standards, such as ISO are used. The agency maintains bookkeeping and storage of CO <sub>2</sub> emissions based on international standards, including SOEs' historical and future emissions.
<b>Ireland</b>	General EU requirements on non-financial disclosure are applicable. Moreover, the Climate Action Framework (defined above), which is voluntary in nature, reflects the expectation that SOEs will demonstrate best practice in their approach



Jurisdiction	Brief description
	to climate-related disclosures.
Japan	Specific practices vary by SOEs, though commonly used reporting instruments include TCFD, GRI, IIRC and SASB. Some companies also engage external auditors to monitor their performance. Moreover, companies subject to specific acts on rationalisation of energy use are expected to report on their consumption and emissions.
Latvia	General EU requirements on non-financial disclosure are applicable and large SOEs issue statements in compliance with GRI standards.
Lithuania	General EU requirements on non-financial disclosure are applicable, and while GRI is commonly used, other frameworks can be applicable as well, such as UN Global Compact Principles and Nasdaq's ESG Reporting Guide, among others. SOEs may be subject to state audits depending on specific legal and regulatory requirements, and scheduled inspections may be carried out. Moreover, entities part of the EU emissions trading system are subject to verification of their greenhouse gas emissions.
Mexico	Public and private companies are required to report on their environmental performance, which is not available publicly, but certain large SOEs disclose non-financial information, including related to climate and environment. Guidance followed include IPIECA (published by API) and IOGP, among others. SOEs are also required to report information into the national emissions registry above a certain emissions threshold.
Netherlands	General EU requirements on non-financial disclosure are applicable and most SOEs submit climate-related information, though there is no uniform policy in place. SOEs in the financial sector are involved with PCAF (Partnership for Carbon-Accounting Financials), while others may refer to TCFD or GHG Protocol, which are based on their own initiative. Generally, non-financial information is externally and independently audited, including climate-related information covered in annual reports.
New Zealand	Most SOEs use integrated reporting frameworks to ensure sustainability. Though audits are not performed, information may be requested by the Governor General. Currently a bill is being deliberated that will render annual disclosure based on TCFD mandatory for publicly listed companies, banks, and investment managers.
Norway	Reporting requirements are the same for both SOEs and private companies, and typically large companies are expected to provide information regarding environmental issues. Furthermore, according to the state ownership policy, SOEs are expected to lead by example in their work on responsible business conduct and follow internationally recognised standards and to be transparent about material sustainability issues. Norway also implements EU Taxonomy Regulation, including reporting requirements for companies. The state has also carried out an independent analysis on SOE climate performance.
Peru	FONAFE companies are required to issue annual sustainability reports, for which GRI is typically used. Audits are typically not required, though climate data is available individually for SOEs. Sustainability reports are recommended to be published. Moreover, companies on FONAFE that are on the stock market are required to fill out a form on the Stock Market Society, where they also indicate their environmental performance.
Sweden	According to the state ownership policy, SOEs are expected to produce sustainability reports, and ESG data is gathered by the state annually. They are expected to carry out materiality analysis and information is required to be published. Compared to reporting requirements applicable to other companies based on employment thresholds, all Swedish SOEs are required to report on their sustainable practices. In 2015 and 2020, state owner carried out a monitoring of SOE climate performance and strategies. (It is worth noting that applicable disclosure requirements are stricter than those outlined under EU regulations).
Switzerland	Swiss code sets requirements for listed companies to submit non-financial reports. SOEs report and disclose climate-related information, often based on GRI framework, but these are not aggregated at a federal level. However, it is worth noting that the parliament is interested in reviewing information provided by SOEs with regard to their climate-related impacts, which is shared in an aggregated form. The state as an owner is also discussing possibilities for aggregating climate-related information in the future.
United Kingdom	The UK is currently introducing a framework to render TCFD-aligned disclosures fully mandatory, with specific requirements to be introduced over the next three years.

Source: Author's compilation, based on questionnaire responses.

## 2.6. The role of SOE leadership in advancing climate policies

In recent years, there have been growing expectations for SOE boards and management to integrate sustainability and climate considerations in their decision-making, which includes both physical and transitional risks (see Box 2.8).<sup>43</sup> This section focuses on board-level initiatives aimed at embedding low-carbon transition policies in SOEs and mechanisms to monitor environmental footprint, as well as specific incentives (including both financial and non-financial) for management to promote climate transition within SOEs. Responses from reporting jurisdictions are summarised under Figure 2.3.

### Box 2.8. Leadership training toolkit for SOE boards and senior management to promote climate resilience

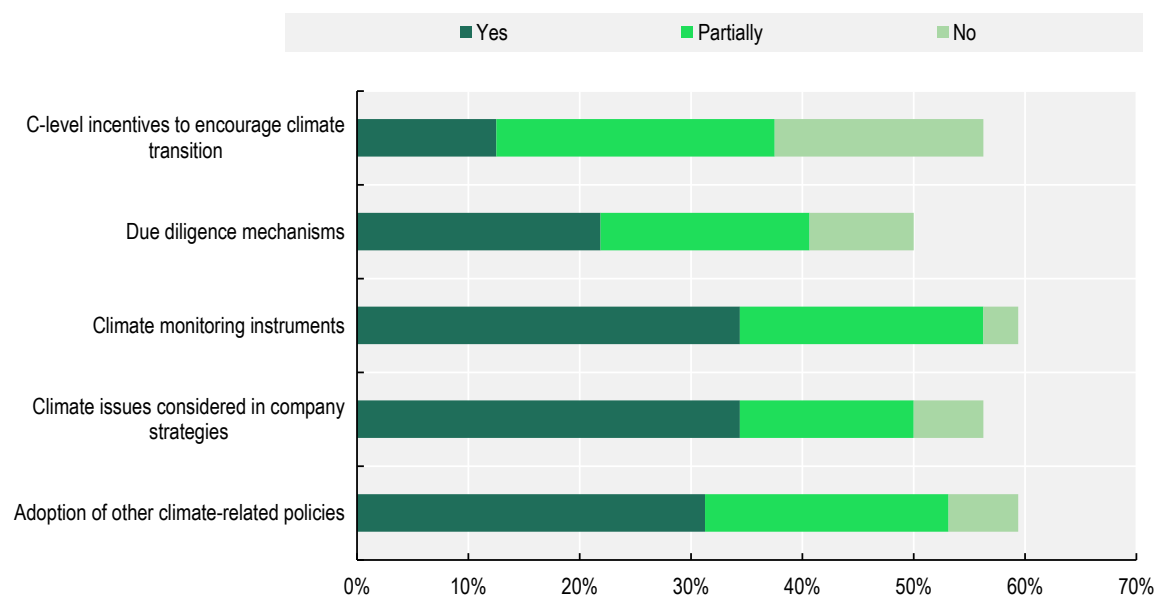
In 2021, the World Bank and IFC launched a Leadership Training Toolkit for SOEs to help build capacity for SOE boards and senior management. The modules are structured in four areas, with themes focusing on climate risk and resilience, as well as gender and diversity, corruption and integrity, and maximising finance for development. In mitigating climate-related risks, the curriculum outlines high-level basics and principles with regard to climate change for the consideration of state and ownership representatives and board members, and focuses on areas, including:

- State climate policy and the state's role as a shareholder in promoting climate resilience
- Climate risk identification and vulnerability assessments for investment planning and project design (including physical and transition risks)
- Ensuring that investments are more climate resilient
- Financing climate-resilient investments

The toolkit further elaborates on corporate governance principles to address climate-related risks by ensuring climate accountability and embedding climate considerations into board structure. Other areas focus on promoting climate-based risk assessment, strategic and organisational integration, incentives, reporting and disclosure, and stakeholder engagement.

Source: World Bank and IFC (2021<sup>[49]</sup>), Leadership training toolkit for state-owned enterprises (SOEs): Boards and owners.

Figure 2.3. Summary of responses regarding the role of SOE leadership in advancing climate policies



Source: Author's compilation, based on questionnaire responses.

#### 2.6.1. Climate considerations in SOE board composition

Approximately one-fifth of those surveyed stated that they have started introducing climate considerations in the board composition of SOEs. In most cases, climate considerations are factored

into decisions in appointing board members if there are specific requirements and prerequisites in SOEs depending on their operations. For example, in **Lithuania**, certain SOEs may require board members to have green development experience. Similarly, in **Sweden, Latvia, Austria** and **the Netherlands**, board members with specific expertise may be appointed in cases where climate issues are significant (for example, in energy or forestry companies), though this is a relatively recent trend. **Norway** and **Ireland** also look for specific expertise in its board appointments, which may include climate-related considerations.

### ***2.6.2. Involvement of supervisory boards in embedding climate policies in SOEs***

Over half of those surveyed report that supervisory boards in SOEs are, to an extent, involved in embedding climate-related policies within SOE's strategies. Frequently, this can take place within the context of promoting responsible business conduct and mitigating climate risks.<sup>44</sup> For example, in **Norway, Finland** and **Sweden**, the ownership policy sets clear expectations for SOEs to ensure value creation, thus encouraging supervisory boards to incorporate relevant provisions within their strategic goals and targets.<sup>45</sup> Similar practices have been observed in **Iceland, France** and **Latvia**, among others. Moreover, in **Hungary**, SOEs are required to follow guidelines introduced by their ownership entity and consider CSR aspects within their risk management plans, which typically includes environmental elements.

Some jurisdictions, including **Switzerland, New Zealand**, and **Brazil**, emphasised that board of directors are responsible for setting climate-related policies and targets, and there is limited interference from state owners. However, considering legal and regulatory requirements with regard to corporate social responsibility and responsible conduct, environmental issues are often taken into account. In others, including **Colombia, Belgium**, and **Japan**, boards embed climate-related initiatives on a case-by-case basis. Some jurisdictions are currently improving their frameworks. As noted earlier, in **the Netherlands** supervisory boards are responsible for setting climate-related policies and the new ownership policy is expected to place further emphasis on long-term value creation within this context.

Furthermore, SOE boards in a number of jurisdictions have also started establishing committees dealing with climate-related matters. For example, in **France**, boards are responsible for validating policies to reduce climate-related impacts of SOEs and ensure that climate-related risks are considered. In achieving these objectives, SOEs often establish CSR committees (if otherwise, specific roles may also be delegated to the audit committee). In **Ireland**, CSR and sustainability committees or sub-committees are starting to be established by boards of SOEs, and they often require relevant competences among board members. In **Norway** and **Austria**, some companies have introduced sustainability committees, and even if they do not exist, these issues can be discussed in other committees (e.g. the audit committee, particularly if climate-related risks are material to the company's operations). Similarly, in **the Netherlands**, most supervisory boards have audit and remuneration committees, though there are often sub-groups that are formed to focus on climate-related aspects. More broadly, such committees on SOE boards are rare and practices vary.

### ***2.6.3. Mechanisms to monitor and mitigate environmental footprint within SOEs***

SOEs in approximately half of the reporting jurisdictions have started adopting mechanisms to monitor their environmental footprint. Some of the most common instruments include monitoring GHG emissions (often in line with the GHG Protocol), water consumption and waste, while submitting relevant climate-related information to national registries. Specific instruments and monitoring mechanisms, however, vary depending on the size, operations and risks of individual SOEs. Moreover, some of those surveyed outlined that they have introduced due diligence and risk management frameworks, whether to meet owner's expectations, strategic goals, or international commitments. For example, in **Finland** and **Norway**, the state expects companies to promote sustainable practices, which translate into their

efforts in integrating RBC risk management within their operations. In some cases, the availability of teams and resources can vary – for example, in **Sweden, Lithuania and Iceland**, due diligence mechanisms are expected to be well developed in larger SOEs. Most notably, Vattenfall, a Swedish multinational power company, has embedded an Enterprise Risk Management in place, the aim of which is to manage risks to which the group is exposed within the context of supporting value creation, ensuring risk awareness, and balancing risk against reward. As climate transition is one of the company's key strategic objectives, risks specifically attributed to climate change and mitigation efforts are closely monitored (Vattenfall, 2020<sup>[50]</sup>). Companies may also apply Environmental Management System under ISO 14 001 to improve their due diligence practices. However, such practices are often voluntary.

#### **2.6.4. Incentives for SOE management to advance climate transition**

SOEs in approximately one-third of reporting jurisdictions have introduced incentives for management to advance climate transition. In **Finland**, sustainability issues (including climate-related aspects) are required by the state owner to be included in the criteria for executive remuneration, though boards decide upon the exact remuneration schemes and objectives. For example, Fortum, the country's state-owned energy company, introduced ESG-related remuneration targets for the first time in 2020 as an incentive mechanism (Fortum, 2021<sup>[51]</sup>). **Lithuania** has also introduced criteria on sustainability targets for CEO remuneration which is subject to its own evaluation methodology. In **the Netherlands**, the state as an owner approves remuneration policy, of which maximum 20% is variable and depends on specific targets as set by the supervisory board, which can be climate-related. Similarly, while **Norway** as a state owner does not have strictly defined policies on creating incentives for climate transition, executive remuneration is expected to be set by the supervisory boards in line with broader goals of achieving sustainable value creation.

Within this context, some companies have introduced incentive schemes and key performance indicators (KPIs) as part of management remuneration that are related to environmental issues and aligned with the company's strategy. For example, in 2020, **France's** EDF introduced a new climate criterion to calculate bonuses for executives based on the carbon intensity of the group's electricity and heat production, which is linked with the achievement of certain targets. In addition, in **Brazil**, certain SOE boards evaluate targets for C-level executives that are linked with the company's environmental practices, which can mainly impact their variable remuneration. Introducing such incentive mechanisms, however, may be challenging to apply – for example, in **Sweden**, executive remuneration is currently fixed without variable components. Some jurisdictions have also adopted non-monetary incentives, including recognition programmes and evaluations. For example, **Croatia and Iceland** have recognition programmes, though latter is currently considering to introduce monetary incentives. In **Japan**, both forms are common – while a number of SOEs have introduced targets for executives as part of improving ESG ratings, others have non-monetary incentives in place.

# **3**

## **Conclusions and policy considerations: State ownership and advancing climate transition policies**

---

Based on the findings of the stocktaking exercise, this section outlines conclusions and policy considerations for advancing climate transition policies in the state-owned sector, and provides considerations for future work.

---

### **3.1. Implications for state ownership and advancing climate transition policies**

SOEs have an important role to play, in view of their sectoral distribution, towards supporting low-carbon transition as well as in motivating responsible business conduct among other market participants. Indeed, an increasing number of state ownership entities are incorporating, among other areas, environmental goals for their SOE portfolios. This goes hand-in-hand with broader international commitments and an increasing awareness that governments as enterprise owners should “lead by example”. However, there are a number of policy considerations worth noting in promoting climate-related policies in the SOE sector, particularly among OECD economies, which merit further exploration. The below conclusions and policy considerations are intended to highlight pertinent questions, and discuss and assess different approaches and practices in terms of promoting green transition, which can inform future work.

### 3.1.1. Promoting climate transition through state ownership

- *Prioritising climate goals and commitments as a state owner.* A key challenge relates to ensuring coherence between the government's broad climate goals and commitments, and the economic activities of SOEs. Often, two policy realities co-exist: one where the government is actively promoting low-carbon transition and one where SOEs continue to invest in carbon intensive assets. While nearly all countries have adopted climate strategies and are looking to reduce carbon emissions in line with the Paris Agreement, the pace at which these commitments translate into domestic policies varies significantly across the globe. For better policy coherence, some jurisdictions have taken the approach of prioritising low-carbon transition goals in their ownership policies, and engaging with SOEs boards to ensure that they set their own goals that support mitigation of climate change and enhance low-carbon transition.
- *Integrating climate goals into state ownership policies.* Although there is often similar treatment in the applicability of climate-related laws, regulations and policies to SOEs and private companies, the ability to change behaviour of SOEs depends largely on their commercial and non-commercial objectives, as well as their treatment in the marketplace. SOEs often mix financial and non-financial targets, and their activities can be influenced by non-commercial objectives (such as ensuring energy security and affordability, and in some cases supporting employment), which could serve as barriers to engaging in low-carbon transition. Depending on the corporate governance model, SOEs and, in some cases, policy makers that own them, may or may not be positioned to directly influence decisions to engage in climate transition. Some jurisdictions have taken the approach of incorporating climate and sustainability goals within state ownership policies and expectations. Although expectations tend to differ between companies where the state is a full, majority, or minority shareholder, state-ownership entities report that clarity and transparency of owner's expectations has helped advance the integration of climate-related goals in the decision-making of individual SOEs.
- *Whole-of-government co-ordination on how the corporate sector can support meeting climate goals.* In many countries, climate co-ordination at the state level relative to the business sector takes place on a broader level, which can support better coherence between national policy priorities and their implementation in practice. In some cases, efforts have been made to co-ordinate government climate action plans and policies through ownership entities and agencies, as applicable, to help reduce GHG emissions (e.g. through integrating emission reduction and energy efficiency targets within their operations).

### 3.1.2. Ownership framework and the level of SOE autonomy

- *Ensuring effective and professionalised ownership steering with regard to climate transition.* Effective ownership steering is important to promote climate transition in the state-owned sector, which remains the first point to communicate owner's expectations and to follow up and evaluate SOE efforts in terms of integrating owner's expectations. To support active ownership, some jurisdictions have measured their portfolio-level exposure to climate-related risks. This in turn has helped some ownership entities evaluate and consider how their state-owned sector contributes to long-term value creation and low carbon transition.
- *Clearly defining the roles of the state owner and corporate boards in promoting climate transition.* Most ownership entities report that ownership dialogue is essential to ensure that the owners' expectations are clearly expressed to boards, which the boards can then translate into strategies and objectives for company management. In most jurisdictions, such dialogue occurs on a quarterly basis, with specific meetings (depending the enterprises' activities) focusing on climate issues as well. In partly state-owned enterprises, countries report that exercising shareholder rights is the main tool to engage with enterprises on owners' expectations and goals, without prejudice to other

shareholders. The annual meeting is also an effective means for state owners to raise owner's expectations, especially for enterprises where climate-related considerations are of high importance. In general, approaches tend to differ across jurisdictions depending on the maturity of the regulatory environment applicable to SOEs and private companies, and the level of state-ownership. State ownership entities report that the level of proactivity of the board in integrating climate-related considerations will also determine how active of a role they may have to take.

- *Monitoring environmental footprints at the portfolio-level and developing a framework to address climate transition goals.* Some jurisdictions highlight the need to have a clear understanding of the environmental footprint of their portfolios. This has been carried out through third party assessments. These assessments help build a knowledge base and capacity within the ownership entity on relevant metrics. Where such practices are well established, ownership entities report that this knowledge can help build in-house expertise that can support continued monitoring and tracking of the portfolio-level environmental footprint. Many SOEs also report on climate-related goals on a quarterly basis. In some countries, voluntary reporting frameworks are intended to encourage best practices among companies to meet climate objectives and support the goal of “leading by example.”

### **3.1.3. Public policy objectives and level playing field**

- *Balancing commercial and non-commercial objectives applicable to SOEs.* SOEs are often tasked with non-commercial objectives, which broadens their goals beyond profit maximisation. The state may decide to charge SOEs with certain tasks that would not be expected from private firms in like circumstances. While the presence of such objectives may be integral to the rationale for state ownership, in some cases (particularly in energy and transportation sectors where carbon emissions are high) they may be a source of conflict with broader objectives of promoting climate transition. In most jurisdictions, state owners hold dialogues with boards to discuss a range of issues, including non-commercial objectives that may potentially conflict with climate-related goals and to identify solutions (e.g. through (re)defining objectives, introducing upgrades to reduce emission levels, etc.).
- *Ensuring level playing field in markets where SOEs and private firms coexist.* Recent research has pointed to the fact that SOEs may be subject to undue advantages or disadvantages due to their public ownership (e.g. preferential treatment and regulatory insulation, soft budget constraints and access to explicit or implicit state guarantees and below-market financing), and as a result of these advantages or disadvantages SOEs may be less reactive to market mechanisms, such as carbon taxes or emissions trading schemes, aimed at mitigating carbon emissions. According to the survey results, in most cases, government owners do not identify explicit concerns with maintaining a level playing field where public and private firms compete, and in particular with regard to the effectiveness of instruments, such as carbon pricing and emissions trading, on SOEs. While this may be the case, further research may explore level playing field concerns.
- *Avoiding barriers to entry.* As governments develop incentives to promote low-carbon transition, they may consider how such incentives are applied to the SOE sector. While such schemes can be necessary, especially in the case of clear market failures, the extent to which they have an impact on the competitive landscape might be explored in the future. Earlier OECD research has documented that SOEs can, on the one hand, potentially hinder the entry of new market players due to their role as incumbents in certain sectors (e.g. power generation), and on the other, facilitate a low-carbon transition, particularly when it comes to engaging in (or financing) low-carbon investments (including in large-scale renewable projects and infrastructure investments in which the state may play a central role to advance low-carbon transition).



- *Addressing climate risk and policy trade-offs from a long-term perspective.* Not unlike private investors, state ownership entities are increasingly factoring ESG goals into their long-term investment strategies. Some ownership entities evaluate the level of exposure of their overall portfolio to climate related risks, including evaluating how climate issues will factor into the expected returns and potential future trade-offs. Specific approaches will depend on the level of risk exposure, and the approach of individual SOEs to integrate risk mitigation mechanisms into their corporate strategies. Some ownership entities note that the evolving regulatory landscape will have an impact in terms of how risks are assessed in the future, particularly when it comes to the risk of stranded assets (e.g. investments in the coal sector). State owners point to on-going dialogue with boards as a mechanism to engage with SOEs on these matters.

### **3.1.4. Responsible business conduct and stakeholder engagement on climate issues**

- *Promoting responsible business conduct to mitigate potential and actual climate-related impacts.* RBC sets out expectations that companies avoid and address adverse impacts in their operations, supply chains and relationships, while ensuring positive contribution to economic growth and sustainable development. Common RBC-related frameworks that are used across reporting jurisdictions include GRI, ISO and SDGs, while some reported that SOEs also refer to the OECD Guidelines for Multinational Enterprises and related due diligence guidance, which provide consideration for mitigating adverse environmental impacts. Many expect reporting frameworks to evolve with legal and regulatory changes that are currently under discussion in various jurisdictions.
- *Ensuring stakeholder engagement in advancing climate transition.* In recent years, climate-related issues have become central among stakeholders, including persons or groups that have interests and are or could be impacted by an enterprise's activities (such as communities at local, regional or national levels, employees, consumers and end-users, etc.). In particular, there have been growing number of grievances and climate-related cases against companies, which in some cases involved SOEs, due in part to stakeholder activism. This has resulted, in some cases, in enhanced approaches towards environmental impact assessments and better functioning mechanisms for the handling of and remedy actions for affected stakeholders.

### **3.1.5. Climate transparency and disclosure**

- *Climate-related disclosures in aggregate reports and analysing climate-related risks in the SOE sector.* There does not yet appear to be systematic analysis and disclosure of portfolio-level exposure to climate-related risks in annual aggregate reporting by ownership entities. A number of state owners have started disclosing aggregate-level climate-related information regarding their SOE portfolios, or are considering doing so in the near future. In some cases, these disclosures are a by-product of upgrades to ownership policies and expectations for SOEs to engage in climate-related disclosures. Information regarding climate may also be identified through other national databases (such as ETS reporting).
- *Non-financial and climate-related disclosure by SOEs.* SOEs are typically subject to non-financial disclosure requirements, as applicable to the general corporate sector, which may vary depending on their size and sector of operation. Some ownership entities have incorporated additional expectations regarding SOE disclosure of material financial and non-financial information, which may bear on climate-related issues. In case of absence of strict non-financial disclosure requirements, SOEs in a number of jurisdictions also engage in voluntary non-financial disclosure. As there is no single disclosure framework or mechanism in place, some jurisdictions are working to improve their frameworks to accommodate an increased demand to cover material information related to climate-related risks and produce consistent, comparable and reliable climate-related information (e.g. through the adoption of mandatory TCFD requirements). As international standard

setting is still evolving in this area, SOE-related disclosure and reporting requirements will, according to survey respondents, evolve in the coming years.

### **3.1.6. The role of SOE leadership in enhancing climate transition**

- *Engaging corporate boards in climate transition and mainstreaming climate considerations in decision making.* According to a number of ownership entities, it is important to ensure that boards have the ability to address climate issues, particularly if material for the company. As such, board appointment and nomination procedures and practices are beginning to factor in climate-related competencies for board positions. The need for climate related competencies relate to the fact that SOE boards should be equipped with knowledge and understanding of climate related risks (among other areas). This includes introducing climate-related policies and due diligence mechanisms within companies, and setting climate-related targets to meet objectives under the ownership policy and expectations, or as applicable, broader national or international climate targets. A handful of jurisdictions encourage corporate boards to establish relevant committees or sub-committees on RBC-related issues, or otherwise to cover these issues through existing committees (such as audit and risk management committees).
- *Providing incentives for SOE management to engage in climate transition.* A small number of jurisdictions have introduced incentives for management, in the form of variable remuneration, which can be linked with climate and other sustainability goals. If variable remuneration is not applicable, management may be subject to key performance indicators focusing on sustainability issues, including with regard to environmental performance. However, as noted by earlier OECD studies, aspects related to remuneration in the state-owned sector remain sensitive and care should be taken to ensure appropriate balance of incentives and that applied metrics are measurable and quantifiable.

# Annex A. Questionnaire: Climate change and low-carbon transition policies – The role of state-owned enterprises

## Overall climate and environmental policies (not limited to the state-owned sector)

- Please provide a brief overview of climate-related and environmental policies, laws and regulations actually in force in your country. What are some of the international climate and environmental commitments with which your country has sought to comply/adhere (or has already done so)?
- Has the government adopted any specific mechanisms or instruments (such as carbon pricing or other market-based mechanisms, environmental due diligence practices, environmental impact assessment, etc.) to help mitigate environmental or climate-related challenges?
- Are there any specific measures the government has adopted to enable/enforce the identification and mitigation of climate-related and environmental risks, and to advance low-carbon transition?
- How have climate or environmental policies evolved over the last 10 years (including any specific changes with regard to their applicability to SOEs)?

## Linking climate and environmental policies with SOE ownership policies and rationales

Please provide an overview of your government's policy for advancing climate-related policies in state-owned enterprises, as well as practices in implementing these policies. The response may include (but not be limited to) the following issues:

- What are some of the government policies, laws, requirements and expectations in advancing climate-related and environmental policies in SOEs? Are the existing frameworks applicable equally to SOEs and private companies? Are there any exceptions applicable to SOEs that should be considered?
- Are state ownership expectations on climate transition policies reflected in your state ownership policies or rationales (or if applicable, within ownership policies/rationales of individual SOEs)? If so, do these make reference to specific international or national climate commitments? If so, which ones?
- Where applicable, are efforts to advance policies related to climate, environment, or low-carbon transition within SOEs co-ordinated across government agencies? Examples could include ensuring co-ordination across relevant domestic government bodies as well as with sub-national government bodies and authorities on cross-cutting issues, reflecting climate considerations in national development plans and/or other sectoral development strategies.
- To what extent are SOEs involved/engaged in processes, including the development of laws, policies and regulations related to climate/environment?

## Climate policies and exercising ownership

- How and through what channels does the government communicate its expectations regarding climate and environmental policies, as well as low-carbon transition, to SOEs? Does the state provide any guidelines in translating such expectations within SOEs (if applicable, are the SOEs involved in developing such guidelines)?
- Does the government require SOEs to set specific climate-related and environmental targets/objectives, and are there any mechanisms to monitor the performance of SOEs in this aspect? If so, please elaborate.
- Does the government facilitate SOEs' ability to meet expectations with regard to climate, environmental protection/risk mitigation, and low-carbon transition, such as through trainings, guidance or capacity-building to sensitise SOEs on relevant matters? If so, please elaborate.
- Some governments have put in place supplementary or "softer" incentives (such as awards, recognition, etc.) to promote climate and environmental initiatives, and to advance low-carbon transition in SOEs. Are such incentives provided in SOEs in your country?
- Does the ownership entity report on climate related issues (as well as environmental risks and mitigation efforts, and low-carbon transition) in its annual aggregate report (or through other disclosure mechanisms to the parliament, or other representative body, and/or the general public)?
- Is climate-related information considered in analysing SOE financial performance and is such information disclosed? Please provide examples if applicable.
- Have aspects related to climate (as well as the environment and low-carbon transition) affected the board composition of SOEs?

## SOEs in the marketplace and meeting climate-related expectations

- Where they exist, are market-related policies and mechanisms to mitigate environmental challenges applicable to SOEs? Please provide examples.
- Are SOEs expected to meet public service obligations or engage in other activities that may prevent them from aligning with government-set expectations or targets on climate? If so, please provide examples, including how the climate impact might be mitigated.
- Has the government introduced mechanisms to finance climate-related initiatives (such as green development banks, green investment opportunities, subsidies, feed-in tariffs, etc.)? To what extent have these policies been targeted at SOEs? Are there any specific expectations for state-owned banks to avoid financing fossil fuels/other polluters?
- What government measures are in place to ensure that contracting and procurement processes are based on well-recognised environmental standards? Have climate-related requirements been introduced in carrying out procurement practices?
- Are there examples of SOE engagement in co-operative projects, such as joint ventures and public-private partnerships, to promote climate/environment friendly practices? Please provide examples.

## Enhancing stakeholder engagement and responsible conduct

- Are SOEs expected to engage with stakeholders (such as civil society, employees, etc.) regarding climate and environmental issues? What platforms for dialogue and engagement are provided? Are consultations carried out regularly? Are such consultations voluntary or based on legal requirements?

- Are stakeholders able to engage in processes (including judicial or non-judicial mechanisms) in case of adverse climate or environmental impacts stemming from the actions of SOEs? What measures has the government taken in this regard? Do SOEs provide any internal mechanisms for remediation?
- Do SOEs adhere to any international standards related to climate (for example, ISO or other related standards on environmental management, monitoring climate change, mitigation and adaptation, quantifying GHG emissions, etc.)?

## Climate transparency and disclosure

- Are SOEs subject to reporting climate-related, environmental (including risks/mitigation efforts), and other non-financial information, and, if so, do they follow any specific (international) reporting standards or guidance? If applicable, please provide examples and name the commonly used standards.
- Considering that reporting requirements may vary depending on the size of SOEs, please indicate in the table below and, as needed, provide any concrete examples. Please also specify the criteria/threshold based on which SOEs are considered as “large”, “medium-sized”, and “small”. If such breakdown is not possible, please only report totals. Please also indicate if such reporting requirements depend on the SOE sector of operation or on whether they are considered to be operating in “high impact activities”.

**Table A.1. Information gathering: Reporting requirements depending on SOE size**

	Large/economically important SOEs	Medium/Small SOEs	Other (please specify)
Climate-related objectives and their fulfilment			
Climate-related costs, funding arrangements and financial assistance measures			
Climate-related policies and implementation processes			
Where applicable, climate-based remuneration and incentives for board and management			
Foreseeable environmental and climate-related risks factors, and measures taken to manage such risks			
Issues related to relevant stakeholders			

- Are SOEs subject to climate/environmental audits? If so, are such audits used as mechanisms for progress monitoring? Are follow-up audits periodic or performed on an ad-hoc basis? If applicable, please provide examples and details on the competent audit bodies (e.g. supreme audit institutions, independent auditors, etc.).
- Is climate-related data and environmental impact reported/available for individual SOEs? Is data aggregated by sector (if applicable, are SOEs segmented/grouped based on their impacts on the environment/climate)? If available, please provide data on greenhouse gas emissions of SOEs aggregated by sector (including primary sectors, transportation, gas and electricity, utilities, and manufacturing).

## Climate policies and board responsibilities in SOEs

- Where they exist, to what extent are SOE boards involved in setting climate-related policies and standards in SOEs (or other policies and strategies affiliated with mitigating environmental risks and

promoting low-carbon transition)? Is there a practice of establishing committees involved in ensuring environmental due diligence and promoting climate-friendly policies?

- Do SOEs have internal mechanisms, policies, tools or other functions to monitor and mitigate their environmental footprint?
- Have steps been taken to embed RBC and due diligence policies and practices in SOEs to outline and mitigate climate or environmental risks/impacts throughout their operations, supply chains and business relationships?
- Have steps been taken to ensure the integration of climate and environmental risks and opportunities in the SOE strategies?
- Have any incentives been introduced to further underpin climate-friendly practices within SOEs (for example, through bonuses, KPIs, awards, etc.)? Have steps been taken to ensure integration of climate-related targets in the remuneration of management? If so, please provide examples.

### Other/context-related questions

- Have there been any recent controversies related to climate or environmental issues linked with the SOE sector that should be noted? In particular, have SOEs been sanctioned for any infractions with regard to climate or environmental policies?
- Are there any policy reforms bearing on SOEs currently under development or implementation worth noting within the context of this project?
- Are SOEs required to benchmark their climate change and low-carbon transition policies towards their domestic or international peers on selected key performance indicators? How informative and comparable is such benchmarking at this development phase?
- Do SOEs set climate-related policies (as well as other policies linked with environmental protection and low-carbon transition) for short, medium or long term? If so, how are the policy targets divided between different timeframes?
- Is there anything else you could/wish to share with us that would help us understand the role of SOEs in advancing efforts to promote low-carbon transition and advance climate friendly policies/initiatives?

# References

- Benoit, P. (2019), *Engaging State-Owned Enterprises into Climate Action*, Columbia Center on Global Energy Policy, <https://www.energypolicy.columbia.edu/research/report/engaging-state-owned-enterprises-climate-action>. [39]
- Benoit, P. and A. Clark (2022), *Greenhouse Gas Emissions from State-Owned Enterprises: A Preliminary Inventory*, Columbia University, <https://www.energypolicy.columbia.edu/research/report/greenhouse-gas-emissions-state-owned-enterprises-preliminary-inventory>. [6]
- BNEF (2021), *Public Market Financing Lifts Renewable Energy Investment to New First-Half Year Record in 2021*, BloombergNEF, <https://about.bnef.com/blog/public-market-financing-lifts-renewable-energy-investment-to-new-first-half-year-record-in-2021/>. [59]
- CDSB (2019), *CDSB Framework for reporting environmental & climate change information*, <https://www.cdsb.net/what-we-do/reporting-frameworks/environmental-information-natural-capital>. [48]
- Christiansen, H. (2021), *State Support to the Air Transport Sector: Monitoring developments related to the Covid-19 crisis*, OECD Publishing, <https://www.oecd.org/corporate/State-Support-to-the-Air-Transport-Sector-Monitoring-Developments-Related-to-the-COVID-19-Crisis.pdf>. [57]
- EBRD (2020), *Transition Report 2020-21: the State Strikes Back*, European Bank for Reconstruction and Development, <https://www.ebrd.com/news/publications/transition-report/transition-report-202021.html>. [24]
- European Commission (2017), *Commission guidelines on non-financial reporting*, European Commission, [https://ec.europa.eu/info/publications/non-financial-reporting-guidelines\\_en#climate](https://ec.europa.eu/info/publications/non-financial-reporting-guidelines_en#climate). [53]
- European Commission (n.d.), *Carbon Border Adjustment Mechanism*, [https://ec.europa.eu/taxation\\_customs/green-taxation-0/carbon-border-adjustment-mechanism\\_en](https://ec.europa.eu/taxation_customs/green-taxation-0/carbon-border-adjustment-mechanism_en). [56]
- European Commission (n.d.), *EU Emissions Trading System (EU ETS)*, [https://ec.europa.eu/clima/policies/ets\\_en](https://ec.europa.eu/clima/policies/ets_en). [12]
- European Commission (n.d.), *Union Registry*, [https://ec.europa.eu/clima/eu-action/eu-emissions-trading-system-eu-ets/union-registry\\_en#ecl-inpage-1118](https://ec.europa.eu/clima/eu-action/eu-emissions-trading-system-eu-ets/union-registry_en#ecl-inpage-1118). [62]
- Fortum (2021), *Remuneration 2020*, <https://doi.org/10.21203/rs.3.rs-1111111/v1> In the 2020–2022 LTI plan, Fortum [51]



- introduced an ESG related target.
- Hill, A. and M. Babin (2021), *What COP26 Did and Didn't Accomplish*, Council on Foreign Relations, <https://www.cfr.org/in-brief/cop26-climate-outcomes-successes-failures-glasgow>. [9]
- HYBRIT (n.d.), *A fossil-free future*, <https://www.hybritdevelopment.se/en/a-fossil-free-future/>. [42]
- IEA (2021), *Data and statistics: France*, International Energy Agency, <https://www.iea.org/data-and-statistics/data-tables?country=FRANCE&energy=Balances&year=2019>. [54]
- IEA (2021), *Net Zero by 2050: a roadmap for the global energy sector*, International Energy Agency, [https://iea.blob.core.windows.net/assets/beceb956-0dcf-4d73-89fe-1310e3046d68/NetZeroBy2050-ARoadmapfortheGlobalEnergySector\\_CORR.pdf](https://iea.blob.core.windows.net/assets/beceb956-0dcf-4d73-89fe-1310e3046d68/NetZeroBy2050-ARoadmapfortheGlobalEnergySector_CORR.pdf). [11]
- IEA (2020), *Energy Technology Perspectives 2020: Special Report on Carbon Capture Utilisation and Storage*, International Energy Agency, [https://iea.blob.core.windows.net/assets/181b48b4-323f-454d-96fb-0bb1889d96a9/CCUS\\_in\\_clean\\_energy\\_transitions.pdf](https://iea.blob.core.windows.net/assets/181b48b4-323f-454d-96fb-0bb1889d96a9/CCUS_in_clean_energy_transitions.pdf). [58]
- IEA (2020), *Share of state-owned energy investments by economy type and sector, 2019*, International Energy Agency, <https://www.iea.org/data-and-statistics/charts/share-of-state-owned-energy-investments-by-economy-type-and-sector-2019>. [21]
- IEA (2020), *World Energy Investment 2020*, International Energy Agency, <https://iea.blob.core.windows.net/assets/ef8ffa01-9958-49f5-9b3b-7842e30f6177/WEI2020.pdf>. [29]
- IPCC (2021), *Climate Change 2021: The Physical Science Basis - Summary for Policymakers*, Cambridge University Press, [https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC\\_AR6\\_WGI\\_SPM.pdf](https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_SPM.pdf). [14]
- ISO (n.d.), *Standards*, International Organization for Standardization, <https://www.iso.org/iso-14001-environmental-management.html>. [60]
- ITF (2021), *Worldwide transport activity to double, emissions to rise further*, International Transport Forum, OECD, <https://www.itf-oecd.org/worldwide-transport-activity-double-emissions-rise-further>. [15]
- ITF (2019), *Transport demand set to triple, but sector faces potential disruptions*, International Transport Forum, OECD, <https://www.itf-oecd.org/transport-demand-set-triple-sector-faces-potential-disruptions>. [55]
- Jiang, J. and C. Ding (2015), *Update on Overseas Investments by China's National Oil Companies: Achievements and Challenges since 2011*, IEA, <https://doi.org/10.1787/9789264247505-en>. [28]
- Lillis, J. (2015), *Kazakhstan: Central Bank Steps In To Prop Up Cash-Strapped Oil Giant*, Eurasianet, <https://eurasianet.org/kazakhstan-central-bank-steps-in-to-prop-up-cash-strapped-oil-giant>. [26]
- LSE & University of Leeds (2019), *Policy brief: National laws and policies on climate change adaptation - a global review*, Grantham Research Institute on Climate Change and the Environment, Centre for Climate Change Economics and Policy, <https://www.lse.ac.uk/granthaminstitute/wp-content/uploads/2019/12/National-laws-and-> [10]

- [policies-on-climate-change-adaptation\\_A-global-review.pdf](#).
- Manley, D., D. Mihalyi and P. Heller (2019), *Hidden Giants*, Finance & Development, Vol. 56, No. 4, IMF, <https://www.imf.org/external/pubs/ft/fandd/2019/12/national-oil-companies-need-more-transparency-manley.htm>. [25]
- Ma, X. and K. Gallagher (2021), *Who Funds Overseas Coal Plants? The Need for Transparency and Accountability*, BU Global Development Policy Center, [https://www.bu.edu/gdp/files/2021/07/GCI\\_PB\\_008\\_FIN.pdf](https://www.bu.edu/gdp/files/2021/07/GCI_PB_008_FIN.pdf). [27]
- MEFR France (2021), *Plan d'action climat du Ministère de l'Économie, des Finances et de la Relance, France*, <https://www.entreprises.gouv.fr/fr/actualites/industrie/politique-industrielle/plan-d-actions-climat-du-ministere-de-l-economie-des>. [34]
- Neste (2021), *Renewable diesel use increased rapidly in the public sector and goods transport – Neste the first in Finland to provide companies a service for monitoring transport fuel emissions*, <https://www.neste.com/releases-and-news/transportation/renewable-diesel-use-increased-rapidly-public-sector-and-goods-transport-neste-first-finland-provide>. [38]
- Neste (2020), *Neste and Finnair partner to reduce CO2 footprint of flying with sustainable aviation fuels*, <https://www.neste.com/releases-and-news/aviation/neste-and-finnair-partner-reduce-co2-footprint-flying-sustainable-aviation-fuels>. [37]
- ÖBAG (2021), *Österreichische Beteiligungs AG Sustainability Report 2020*, ÖBAG, [https://www.oebag.gv.at/wp-content/uploads/2021/07/OEBAG\\_NHB-AUSTRIA\\_EN.pdf](https://www.oebag.gv.at/wp-content/uploads/2021/07/OEBAG_NHB-AUSTRIA_EN.pdf). [35]
- OECD (2022), "Climate change", in *Environment at a Glance Indicators*, OECD Publishing, Paris, <https://doi.org/10.1787/5584ad47-en>. [1]
- OECD (2022), *Climate Change and Corporate Governance*, OECD Publishing, Paris, <https://doi.org/10.1787/272d85c3-en>. [32]
- OECD (2022), *Good practice guide for annual aggregate reporting on SOEs*, OECD Publishing, <https://www.oecd.org/corporate/ca/Monitoring-performance-state-owned-enterprises-good-practice-guide-annual-aggregate-reporting-2022.pdf>. [45]
- OECD (2021), *Assessing the Economic Impacts of Environmental Policies: Evidence from a Decade of OECD Research*, OECD Publishing, [https://www.oecd-ilibrary.org/environment/assessing-the-economic-impacts-of-environmental-policies\\_bf2fb156-en](https://www.oecd-ilibrary.org/environment/assessing-the-economic-impacts-of-environmental-policies_bf2fb156-en). [18]
- OECD (2021), *Effective carbon rates 2021: Pricing carbon emissions through tax and emissions trading*, OECD Publishing, Paris, <https://doi.org/10.1787/0e8e24f5-en>. [13]
- OECD (2021), *Ownership and Governance of State-Owned Enterprises : A Compendium of National Practices*, OECD Publishing, <https://www.oecd.org/corporate/Ownership-and-Governance-of-State-Owned-Enterprises-A-Compendium-of-National-Practices-2021.pdf>. [33]
- OECD (2021), *Responsible Business Conduct Due Diligence Practices in Ukraine's Energy Sector*, OECD Publishing, <https://mneguidelines.oecd.org/responsible-business-conduct-due-diligence-practices-in-ukraine-energy-sector.htm>. [40]
- OECD (2021), *The Future of Corporate Governance in Capital Markets following the Covid-19 Crisis*, OECD Publishing, <https://doi.org/10.1787/efb2013c-en>. [19]

- OECD (2020), *Implementing the OECD Guidelines on Corporate Governance of State-Owned Enterprises: Review of Recent Developments*, OECD Publishing, <https://doi.org/10.1787/06ff826b-en>. [30]
- OECD (2020), *OECD Business and Finance Outlook 2020: Sustainable and Resilient Finance*, OECD Publishing, Paris, <https://doi.org/10.1787/eb61fd29-en>. [20]
- OECD (2020), *Transparency and disclosure practices of state-owned enterprises and their owners*, OECD Publishing, <https://www.oecd.org/corporate/Transparency-Disclosure-Practices-SOEs.pdf>. [44]
- OECD (2019), *Brochure on OECD work in support of climate action*, <https://www.oecd.org/env/cc/OECD-work-in-support-of-climate-action.pdf>. [16]
- OECD (2018), *OECD Due Diligence Guidance for Responsible Business Conduct*, OECD Publishing, <https://mneguidelines.oecd.org/due-diligence-guidance-for-responsible-business-conduct.htm>. [41]
- OECD (2018), *State-Owned Enterprises and the Low-Carbon Transition*, OECD Publishing, <https://doi.org/10.1787/06ff826b-en>. [23]
- OECD (2017), *Investing in Climate, Investing in Growth*, OECD Publishing, <https://doi.org/10.1787/9789264273528-en>. [17]
- OECD (2017), *The size and sectoral distribution of state-owned enterprises*, OECD Publishing, <https://doi.org/10.1787/9789264280663-en>. [22]
- OECD (2015), *OECD Guidelines on the Corporate Governance of State-Owned Enterprises, 2015 Edition*, OECD Publishing, <https://doi.org/10.1787/9789264244160-en>. [31]
- Pai, S. and J. Nakano (2021), *Why Won't Major Coal-Dependent Countries Sign on to a Coal Phaseout Deal?*, Center for Strategic and International Studies, <https://www.csis.org/analysis/why-wont-major-coal-dependent-countries-sign-coal-phaseout-deal>. [61]
- Puglisi, L. (2021), *New game, new rules: the draft guidelines for 'green' state aid measures*, Oxera, <https://www.oxera.com/insights/agenda/articles/new-game-new-rules-the-draft-guidelines-for-green-state-aid-measures/>. [36]
- SBTi (n.d.), *Science Based Targets Initiative*, <https://sciencebasedtargets.org/about-us>. [63]
- Setzer, J. and C. Higham (2021), *Global trends in climate change litigation: 2021 snapshot*, London School of Economics: Grantham Research Institute on Climate Change and the Environment, [https://www.lse.ac.uk/granthaminstitute/wp-content/uploads/2021/07/Global-trends-in-climate-change-litigation\\_2021-snapshot.pdf](https://www.lse.ac.uk/granthaminstitute/wp-content/uploads/2021/07/Global-trends-in-climate-change-litigation_2021-snapshot.pdf). [4]
- TCFD (2020), *Guidance on Scenario Analysis for Non-Financial Companies*, Task Force on Climate-related Financial Disclosures, [https://assets.bbhub.io/company/sites/60/2020/09/2020-TCFD\\_Guidance-Scenario-Analysis-Guidance.pdf](https://assets.bbhub.io/company/sites/60/2020/09/2020-TCFD_Guidance-Scenario-Analysis-Guidance.pdf). [47]
- TCFD (2017), *Recommendations of the Task Force on Climate-related Financial Disclosures*, <https://www.fsb-tcf.org/recommendations/>. [46]
- Trucost (2017), *The Norwegian state's direct ownership of companies: climate-related risks*, [43]

- <https://www.regjeringen.no/contentassets/17c99572d12349329f79386e5169b2cc/rapport-om-klima-og-miljo-i-det-statlige-eierskapet.pdf>.
- UN (n.d.), *COP26: Together for our planet*, United Nations, [8]  
<https://www.un.org/en/climatechange/cop26>.
- UNCCC UK (2021), *COP 26 Goals*, <https://ukcop26.org/cop26-goals/>. [5]
- UNFCCC (2021), *The Glasgow Climate Pact – Key Outcomes from COP26*, United Nations Framework Convention on Climate Change, <https://unfccc.int/process-and-meetings/the-paris-agreement/the-glasgow-climate-pact-key-outcomes-from-cop26>. [7]
- UNFCCC (n.d.), *Key aspects of the Paris Agreement*, United Nations Framework Convention on Climate Change, <https://cop23.unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement/key-aspects-of-the-paris-agreement>. [2]
- Vattenfall (2020), *Annual and sustainability report 2020*, Vattenfall, [50]  
[https://group.vattenfall.com/siteassets/corporate/investors/annual-reports/2020/vattenfall-annual-and-sustainability-report2020\\_.pdf](https://group.vattenfall.com/siteassets/corporate/investors/annual-reports/2020/vattenfall-annual-and-sustainability-report2020_.pdf).
- WEF (2019), *How to set up effective corporate governance on corporate boards: guiding principles and questions*, World Economic Forum, [52]  
[http://www3.weforum.org/docs/WEF\\_Creating\\_effective\\_climate\\_governance\\_on\\_corporate\\_boards.pdf](http://www3.weforum.org/docs/WEF_Creating_effective_climate_governance_on_corporate_boards.pdf).
- World Bank and IFC (2021), *Leadership training toolkit for state-owned enterprises (SOEs): Boards and owners*, World Bank Group, [49]  
[https://www.ifc.org/wps/wcm/connect/topics\\_ext\\_content/ifc\\_external\\_corporate\\_site/ifc+cg/resources/toolkits+and+manuals/soe+leadership+toolkit](https://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/ifc+cg/resources/toolkits+and+manuals/soe+leadership+toolkit).
- World Resources Institute (2021), *Climate Watch NDC Content*, World Resources Institute, [3]  
[https://www.climatewatchdata.org/ndcs-explore?category=unfccc\\_process&showEUCountries=true](https://www.climatewatchdata.org/ndcs-explore?category=unfccc_process&showEUCountries=true).

# Notes

<sup>1</sup> In particular, these include including Canada (2050), the European Union (2050), Japan (2050), South Korea (2050), the United Kingdom (2050), the United States (2050), China (2060), Indonesia (2060), and India (2070) (Benoit and Clark, 2022<sup>[6]</sup>).

<sup>2</sup> According to one assessment of national adaptation laws and policies, 91 countries had at least one law that addressed climate change adaptation and over 120 countries had at least one framework document addressing climate change adaptation. Among the existing laws and policies on climate, majority (40%) came into force between 2009-16 (LSE Database on Climate Change Laws of the World [https://climate-laws.org/legislation\\_and\\_policies?law\\_passed\\_from=1947&law\\_passed\\_to=2021](https://climate-laws.org/legislation_and_policies?law_passed_from=1947&law_passed_to=2021)).

<sup>3</sup> Approximately 60% of carbon emissions from energy use were unpriced in 2018, while a large number of OECD and G20 countries should do more to reach EUR 60 per tonne of CO<sub>2</sub> benchmark.

<sup>4</sup> In July 2021, the European Commission adopted a proposal for a new Carbon Border Adjustment Mechanism which will put a carbon price on imports of a targeted selection of products so that ambitious climate action in Europe does not lead to “carbon leakage”. This will ensure that European emission reductions contribute to a global emissions decline, instead of pushing carbon-intensive production outside Europe. It also aims to encourage industry outside the EU and international partners to take steps in the same direction (European Commission, n.d.<sup>[56]</sup>).

<sup>5</sup> Due to the economic impact of COVID-19 pandemic, there was an unprecedented 5.8% reduction in CO<sub>2</sub> emission levels in 2020. However, with renewed economic activity, emission levels are expected to reach 33 GtCO<sub>2</sub> equivalent in 2021, which is 1.2% below the level in 2019 (IEA, 2021<sup>[11]</sup>). In addition, a 2021 assessment released by the UN inter-governmental panel on climate change revealed that anthropogenic emissions still contribute heavily to climate change and hazards, including rising temperature and sea levels, as well as weather extremes are likely to continue. Specific scenarios will adjust based on the reduction in emission levels, without which average temperature level increase is expected to surpass 2°C by the end of the century (IPCC, 2021<sup>[14]</sup>).

<sup>6</sup> OECD countries emit about a third of CO<sub>2</sub> emissions from energy use, compared to over 50% in 1990. Per capita, they emit more CO<sub>2</sub> than most other world regions, and individual OECD countries' progress rates significantly vary. Carbon footprint that accounts for all carbon emitted to satisfy domestic demand is higher in OECD countries than emissions from domestic production, because production of goods to other countries has been outsourced (OECD, 2022<sup>[1]</sup>).

<sup>7</sup> Earlier assessment revealed that passenger transport and global freight demand was expected to triple between 2015-50, while transport-based CO<sub>2</sub> emissions were likely to grow by 60% during this period (OECD, 2019<sup>[16]</sup>; ITF, 2019<sup>[55]</sup>).

<sup>8</sup> Furthermore, many governments continue supporting fossil fuel production, particularly oil and gas. It undermines the effectiveness of environmental policies by lowering the cost of emitting carbon and it is a barrier to moving towards a more energy efficient and low-carbon economy. The 50 OECD, G20 and Eastern Partnership Economies provided around USD 183 billion in support for fossil fuels in 2020, a 10% decrease compared to 2019. This has stemmed mainly from falling fuel prices and demand, but subsidies are expected to increase in the coming years (OECD, 2022<sup>[11]</sup>)

<sup>9</sup> According to OECD estimates, over 2016-30, USD 6.3 trillion will be required annually for infrastructure investments to meet global development needs, with an additional USD 0.6 trillion annually during the same period to ensure that investments are climate compatible. Added costs are expected to be offset over time by fuel savings from low-carbon technologies (OECD, 2019<sup>[16]</sup>; 2021<sup>[18]</sup>; 2017<sup>[17]</sup>). Furthermore, average investments in energy systems alone will require between USD 1.6 and USD 3.8 trillion annually between 2016-50 to limit global warming to 1.5°C (OECD, 2022<sup>[11]</sup>)

<sup>10</sup> Due to COVID-19, a small number of economies have witnessed change in ownership in the aviation sector, in which the role of the state has increased (Christiansen, 2021<sup>[57]</sup>).

<sup>11</sup> In particular, railway monopolies in transition economies are overwhelmingly state-owned and are run by vertically integrated entities, which provide infrastructure, passenger and freight transport, and various related services. Over the past 30 years, the EU has called for unbundling the railways as part of boosting competition and increasing transparency of government-supported railways, but single national monopolies still exist in a number of countries. Moreover, some of the largest airlines, urban transit and metro systems remain under state or municipal ownership in both advanced and emerging economies (EBRD, 2020<sup>[24]</sup>; Benoit, 2019<sup>[39]</sup>).

<sup>12</sup> A study published in 2019 stated that SOE emissions in the energy sector alone amounted to approximately 6.2 gigatonnes CO<sub>2</sub> equivalent (GtCO<sub>2</sub>e) (Benoit, 2019<sup>[39]</sup>). However, considering that the current estimate is based on a sample of SOEs, the overall figure is likely to be higher (Benoit and Clark, 2022<sup>[6]</sup>). Moreover, the sample is based on companies where state ownership is 50% or higher, and thus excludes calculations of emissions by partly state-owned companies.

<sup>13</sup> According to the study conducted by Columbia University, three-quarters of power sector emissions were linked with Chinese SOEs, with top five power generation companies representing over 20% of total SOEs emissions across all sectors (Benoit and Clark, 2022<sup>[6]</sup>).

<sup>14</sup> For example, in France, nuclear energy represents 42.9% of the country's total primary supply, which is operated by EDF, a state-owned enterprise in the power sector (Benoit and Clark, 2022<sup>[6]</sup>; IEA, 2021<sup>[54]</sup>).

<sup>15</sup> According to the IEA, nearly all existing carbon capture and storage projects operating today have benefitted from public support (including through tax credits and subsidies), with one-third of capacities operating as fully or majority-owned SOEs (IEA, 2020<sup>[58]</sup>).

<sup>16</sup> Moreover, during the first half of 2021, investment in solar projects rose to a record USD 78.9 billion, with projects in China alone reaching USD 4.9 billion during 2Q 2021. This increase was largely driven by major financings of gigawatt-scale 'subsidy-free' projects developed by state-owned enterprises, such as China Energy Investment Corp. and Huanghe Hydropower (BNEF, 2021<sup>[59]</sup>).

<sup>17</sup> For example, China's SPIC operated 165 GW portfolio in 2020, 47% of which was coal-based. However, SPIC is also considered to be the world's largest generator of solar and wind installations, with 12 GW and 14 GW, respectively, and holds 22 GW hydroelectric capacity (Benoit and Clark, 2022<sup>[6]</sup>).

<sup>18</sup> Information was gathered through a voluntary questionnaire exercise and follow-up interviews from the following jurisdictions: Argentina, Australia, Austria, Belgium, Brazil, Bulgaria, Chile, Colombia, Croatia, the Czech Republic, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Japan, Latvia, Lithuania, Mexico, the Netherlands, New Zealand, Norway, Peru, the Philippines, Singapore, the Slovak Republic, Sweden, Switzerland, and the United Kingdom. There may also be discrepancies in reporting, even within individual responses, which relate to both questionnaire design and interpretation of the questions. Adjustments have been made to the way information has been presented to account for discrepancies.

<sup>19</sup> The issues paper focuses on the main implications of climate change for corporate governance, including challenges related to shareholders' rights, corporate disclosure and the responsibilities of companies' boards.

<sup>20</sup> For example, the UK Green Investment Bank (UKGIB) was established by the government in 2012 to address market failures in the provision of finance to support green investment projects. As the first institution of its type in the world, UKGIB had a mandate to be both green and profitable, utilising public funds to mobilise private finance into the green energy sector. Between 2012 and 2017, it supported UK green infrastructure projects worth more than GBP 12 billion. It developed market-leading metrics to assess the green impact of its investments, and was required to ensure that all of its investments met at least one of five "green purposes" set out in legislation. In 2017, the UK Government completed the sale of UKGIB to Macquarie Group Limited, a diversified financial group with offices in 31 markets, founded in Sydney, Australia. Now known as the Green Investment Group, the organisation continues to support green infrastructure projects in the UK and globally, bound by the same green purposes as it was in state ownership.

<sup>21</sup> For example, a number of jurisdictions (Belgium, Bulgaria, Colombia, the Czech Republic, Finland, Greece, Latvia, Mexico, and the UK, among others) have adopted measures to promote efficiency in the energy sector, which will equally affect state-owned entities and other market participants.

<sup>22</sup> The EU Taxonomy regulation establishes an EU-wide classification system to provide businesses and investors to identify the degree to which economic activities can be considered environmentally sustainable. More information can be found here: [https://ec.europa.eu/info/business-economy-euro/banking-and-finance/sustainable-finance/eu-taxonomy-sustainable-activities\\_en](https://ec.europa.eu/info/business-economy-euro/banking-and-finance/sustainable-finance/eu-taxonomy-sustainable-activities_en)

<sup>23</sup> For example, Colombia has established a cross-governmental co-ordination entity, which provides advice on achieving effective articulation regarding climate policies throughout the territory. In other cases, such as Iceland, the process is based on inter-ministerial co-ordination, where the Ministry of Finance is responsible for exercising SOE ownership, while the Ministry of Environment and Natural Resources and its institutions monitor the legal and regulatory environment on climate change and implementation, and they are responsible for co-ordinating on climate-related policies that are applicable to SOEs. Moreover, the Philippines has a centralised climate change commission, which is involved in ensuring government consistency with national development policies and programmes.

<sup>24</sup> State owners may influence board and management decisions through active and informed ownership, which also means on-going dialogue with their boards to clarify ownership expectations. While two-way dialogue is encouraged, this may not be possible where there are non-state shareholders.

<sup>25</sup> SBTi defines and promotes best practices in emissions reductions and net-zero targets, and provides technical assistance and resources to companies that set science-based targets in line with the latest



climate science. It also provides companies with independent assessment and validation of targets (SBTi, n.d.<sup>[63]</sup>).

<sup>26</sup> International Organization for Standardization (ISO) is an independent, non-governmental, international organisation that develops standards to ensure the quality, safety, and efficiency of products, services, and systems. ISO certifications exist in a number of areas, including environmental management and social responsibility, and each certification has separate standards and criteria and is classified numerically. For example, ISO 14 001 sets out the criteria for and maps out a framework that a company or organisation can follow to set up an effective environmental management system (ISO, n.d.<sup>[60]</sup>).

<sup>27</sup> In Sweden, the dialogue involves a state secretary (or minister), civil servants, head of unit, director, analyst, a board nomination specialist, as well as a company Chair and CEO. The discussion involves aspects covered under the ownership agenda (including with regard to climate), and achievements on short-term and long-term basis.

<sup>28</sup> The “Exemplary Energy and Climate” initiative is one of 12 measures of the Energy Strategy 2050. It is aimed at the key Swiss providers of publicly relevant services that are seeking to operate in an innovative and exemplary manner from an energy perspective. By signing a declaration of intent, they undertake to make an ambitious contribution to increasing energy efficiency and expanding the use of renewable energy in Switzerland. Read more at: <https://www.vorbild-energie-klima.admin.ch/vbe/en/home.html>.

<sup>29</sup> The Sustainability Index is a strategic management tool based on an internationally recognised methodology. It helps Latvian companies diagnose the sustainability of their operations and the level of corporate responsibility. At the same time, it provides the public, governmental and non-governmental organisations with objective criteria to praise and support companies that help strengthen the Latvian economy in the long run. Read more at: <https://www.incsr.eu/novertejumi/ilgtspejas-indekss/>

<sup>30</sup> The Transparency Benchmark provides transparency in corporate social reporting. It is a study of the qualitative and quantitative development of corporate social reporting among the largest companies in the Netherlands. The government requires companies to be transparent about their CSR policies and activities. The Ministry of Economic Affairs and Climate Policy uses the Transparency Benchmark to provide an insight into the manner in which the largest Dutch companies report their CSR activities. Read more at: <https://www.transparantiebenchmark.nl/en/about-transparency-benchmark>.

<sup>31</sup> For instance, if aid is granted to projects that provide short-term benefits in reducing emissions but they have long-term potential to impede clean technologies (such as investments in natural gas infrastructure), then aid can be distortive.

<sup>32</sup> The presence of public service obligations and protection from competition further results in challenges in balancing commercial and non-commercial objectives, and in maintaining a level playing field in markets where SOEs and private companies coexist. According to the OECD SOE Guidelines, SOEs should receive adequate and transparent compensation for public policy objectives to ensure level playing field, and government usually compensate through tax treatment and soft loans. These tools, however, are often not recommended as they may have adverse effects on competition and may not accurately reflect the costs of public policy objectives. Moreover, commercial and non-commercial objectives should be separated (OECD, 2020<sup>[20]</sup>).

<sup>33</sup> Limitations on emissions trading systems depend partly on the SOE mandate and context of their operation. While private companies can generate profits from selling excess emission allowances, it is

unclear whether SOEs carrying out public service obligations would benefit meaningfully from such sales. In particular, SOEs that operate in quasi-markets may focus more on complying with regulatory requirements, and have limited capacity or interest in training credits as a form of financial investment. Furthermore, ETS requires effective monitoring and enforcement (Benoit, 2019<sup>[39]</sup>).

<sup>34</sup> The issue of stranded assets remains challenging where state owners control significant share of assets in the coal sector. For example, Chinese SOEs remain heavily reliant on coal, making up three-quarters of the sector's global contribution. In particular, the "Big Five" Chinese power generators (Huadian [including subsidiary Huadian Power International], Huaneng, Datang, CEIC, and SPIC) alone represent more than 20% of estimated global SOE emissions across all sectors (Benoit and Clark, 2022<sup>[6]</sup>). Moreover, coal is a significant component of India's energy system, with most of the coal plants funded by state-owned banks, and majority of the coal production is undertaken by state-owned coal companies (Pai and Nakano, 2021<sup>[61]</sup>).

<sup>35</sup> In particular, Finland noted pressure from both investors and other stakeholders when it comes to RBC and CSR-related matters. State as an owner has also continued to witness stakeholder activism from non-governmental organisations to ensure that SOEs engage more actively in climate transition.

<sup>36</sup> The registry is an online database that holds accounts for stationary installations and for aircraft operators. It records national implementation measures, accounts of companies or individuals holding allowances, transfer allowances that are performed, annual CO<sub>2</sub> emissions from installations and aircraft operations, and reconciliation of allowances and verified emissions (European Commission, n.d.<sup>[62]</sup>).

<sup>37</sup> This is consistent with privately owned company's disclosure practices. Without reliable climate-related information, markets are unable to price climate-based risks and opportunities, while facing value shifts and destabilising costs in adjusting to a new landscape.

<sup>38</sup> It is worth noting that the numbers may be higher and not be fully reflected due to absence of responses to specific questions. However, some jurisdictions, particularly the EU countries, are expected to fall under a broader framework where non-financial reporting and disclosure is mandated under the Non-Financial Reporting Directive.

<sup>39</sup> It is worth noting that the European Commission has published non-binding guidelines to disclose non-financial information in a more consistent manner, including climate-related information. These guidelines take into consideration TCFD and forthcoming taxonomy on sustainable activities, while building on recommendations on sustainable finance. However, other guidelines may also be used as long as specific reporting frameworks are indicated (European Commission, 2017<sup>[53]</sup>).

<sup>40</sup> However, it is worth noting that while reporting and disclosure requirements are applicable mainly to large SOEs, some jurisdictions have no such differentiation. For example, in Chile, disclosure requirements are imposed by market commission and entities with public securities are responsible for disclosing non-financial information, which is also applicable to SOEs, though disclosure requirements do not vary depending on their size.

<sup>41</sup> National Fund for the Financing of the Public Sector Companies (FONAFE) is responsible for regulating and co-ordinating State corporate activity.

<sup>42</sup> The EU Non-Financial Reporting Directive (NFRD) lays down the rules on disclosure of non-financial and diversity information by certain large companies. Rules on non-financial reporting currently apply to large public-interest companies with more than 500 employees. This covers approximately 11 700 large companies and groups across the EU, including listed companies, banks, insurance companies, and others designated as public interest entities. Under the directive companies should disclose

information related to environmental and social matters, human rights, anti-corruption, and diversity of company boards. In 2017, the European Commission published guidelines to help companies disclose environmental and social information, which are not mandatory and companies may use other international, European, or national guidelines. In 2019, the European Commission also published guidelines on reporting climate-related information as a supplement. Moreover, in 2021, the Commission adopted a proposal for CSR Reporting Directive, which would amend the existing NFRD by extending the scope, requiring audits and introducing more detailed reporting according to mandatory EU reporting standards.

<sup>43</sup> For example, in 2019, the World Economic Forum introduced the guiding principles on promoting climate governance on supervisory boards. The paper proposed tools that could be useful for the boards in steering climate risks and opportunities, and promoting responsible leadership. It focused on areas, including increasing climate awareness, embedding climate issues in board structures, and improving navigation of risks and opportunities that climate change poses to businesses (WEF, 2019<sup>[52]</sup>). Moreover, in 2021, the World Bank and IFC adopted a Leadership Training Toolkit for SOE supervisory and management board members as part of promoting climate resilience.

<sup>44</sup> Throughout the questionnaire responses, terms such as responsible business conduct, corporate social responsibility, and sustainability policies were used interchangeably. CSR is often used in a similar way as RBC, when defined beyond what has traditionally been considered CSR (mainly philanthropy). RBC is understood to be comprehensive and integral to core business. Many times both RBC and CSR (if used beyond philanthropy) aim to promote the same idea – that enterprises are expected to consider the impact of their activities beyond the impact on the company itself and positively contribute to sustainable development of the countries where they operate.

<sup>45</sup> For example, Sweden's ownership policy states that the board of directors is responsible for developing the enterprise's overall strategy and setting strategic targets for sustainable value creation, which implies climate-related aspects.



