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# WHO IS PLANNING FOR NET ZERO? UNDERSTANDING VARIETIES OF GREEN TRANSITION PLANNING

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### **Understanding Varieties of Green Transition Planning**

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#### **Abstract**

Public planning by governments and state-owned agencies has conventionally constituted the bulk of economic and developmental planning. However, the net-zero transition also entails a substantial involvement of private planning by non-state actors including corporations and financial institutions. Alongside a slew of climate mitigation policies, governments across countries have implemented regulations mandating targeted entities to plan and implement strategies aligning their operations and strategies with the green transition. While the emerging yet growing literature on net-zero transition planning has predominantly focused on corporate transition planning in western neoliberal economic contexts, this paper aims to present and analyse a more heterogeneous landscape of the ‘varieties’ of transition planning emerging through an analysis of government regulations, policies, and laws in 37 jurisdictions using granular survey data collected by the Oxford Climate Policy Monitor in 2025. This is further used to create a typology of transition planning varying across features including their function(s), the entities they target, and the mechanism(s) (market-based or command-and-control) through which targets and plans set by an entity are supposed to be implemented. Finally, we examine the interoperability between transition planning obligations imposed on different actors and sectors, assessing how complementary they are and the gaps between them.

## 1. Introduction

Transition planning is the practice through which entities set climate and environmental targets and develop strategies to credibly meet those targets. As an instrument of climate policy, transition planning—and specifically corporate transition planning—has been the focus of discussion and debate both internationally and domestically over the last few years.

Following a wave of net zero target setting following the Paris Agreement, transition planning gained notoriety as a potential instrument for combatting greenwashing amongst corporate actors and enhancing corporate accountability to sustainability targets. In its 2022 report, *Integrity Matters*, the United Nations High-Level Expert Group on the Net Zero Emissions Commitments of Non-State Entities (HLEG) recommends corporate actors develop and publicly disclose transition plans to show their credible commitment to net zero (HLEG, 2022). The HLEG report also calls upon regulators to develop rules compelling corporate actors to adopt rigorous, consistent, and transparent transition plans. Corporate transition planning has also been a prominent focus of conversations in European policy circles, following the passage of the Corporate Sustainability Due Diligence Directive (CSDDD) in 2025. Under the CSDDD Article 22, companies were required to adopt and implement a transition plan compatible with the Paris Agreement’s goal of limiting global warming to 1.5°C. However, in February 2026, following the contentious Omnibus process in late 2025, the requirement to adopt and put into effect a transition plan was removed -- eliminating what was arguably the only regulation globally requiring corporate transition planning. And while the United Kingdom continues to consider the results of its consultation on mandatory transition planning (DESNZ, 2025), investors have already conveyed their opposition publicly, arguing mandatory UK rules ‘could prompt EU-style backlash’ (Azizuddin, 2026).

It is no wonder commentators have asked, “What happens to climate transition plans in the wake of the EU omnibus?” (Costa, 2026).

Indeed, the future of corporate transition planning regulation has become more uncertain in 2026. However, this Working Paper argues that transition planning as an instrument of climate policy takes many forms, and transition planning rules and regulations oblige more than just corporate actors to develop climate strategies and targets. Rather, transition planning is an instrument used by governments and regulators to shape state and market behaviour and investment—and notably, it is an instrument that has and continues to be utilised across a range of countries and regional contexts.

Drawing on an analysis of government regulations, policies, and laws in 37 jurisdictions, and using granular survey data collected by the [Oxford Climate Policy Monitor](#) in 2024 and 2025, this paper examines ‘varieties’ of transition planning policies. We build a three-part typology of transition planning, focusing on national, sectoral, and corporate transition planning rules. We then consider their varied function(s), the entities they target, and the mechanism(s) through which targets and plans set by an entity are supposed to be implemented. Finally, we examine the interoperability between

transition planning obligations imposed on different actors and sectors, assessing how complementary they are and the gaps between them.

Rather than sounding a death knell for transition planning in the wake of the EU Omnibus, this paper draws on a global evidence base of climate policy to demonstrate that continued relevance and utility of transition planning as an instrument of climate policy.

## 2. Existing Research in Transition Planning

Academic literature on planning has predominantly focused on the role of governments in achieving economic growth and development, viewing the state as vital for creating an enabling architecture that allows private entities and other non-state actors to develop their own targets and plans for a low-emissions pathway (Newell, 2025). The literature often emphasises the distinction between centrally-planned vs market-led or *laissez faire* economies (Chimhowu et al., 2019).

Green industrial policies, such as the EU's European Green Deal approved in 2020 and the US Inflation Reduction Act passed in 2022 (but subsequently rolled back in 2025) exemplify more centrally led planning initiatives. Green industrial policies are defined as states undertaking horizontal industrial policies (not targeted at a particular sector) to facilitate and accelerate economic decarbonisation, by providing incentives such as subsidies to green R&D, access to cheaper capital for green projects, consumer mandates, and green public procurement, among other policy instruments (Allan et al., 2021; Arcand & and Meadowcroft, 2025; Hallegatte et al., 2013).

Ban and Hasselbalch (2025) visualise a more market-led model of green economic planning by states, whereby the state designs and implements structural complementarities between macro-financial architectures, industrial policy, and private sector initiatives (Ban & Hasselbalch, 2025).

However, the structural transformation of economies and systems required to achieve net-zero emissions has also led to increasing emphasis on private-sector planning activities (ITPN, 2025a; Kampmann et al., 2024; Rose et al., 2024). The literature on private planning is primarily focused on planning by 'corporate entities', defined as publicly listed or "large" private entities, constituting both financial institutions (FIs) and non-FIs (Dikau et al., 2025; Smoleńska & Poensgen, 2025). This is crucial insofar as private entities are required to plan and implement changes in their business operations and strategy to decarbonise and adopt more energy-efficient products, services, and processes. Yet, the implementation of private transition plans is contingent on the existence of relevant policy direction, technologies, and a broader enabling infrastructure, often referred to as dependencies (Rose et al., 2024).

Sectoral transition planning brings together the literatures on public and private actors, and highlights its role as an instrument around which public and private sector actors can be convened and coordinated (ITPN, 2025b; UNEP, 2026).

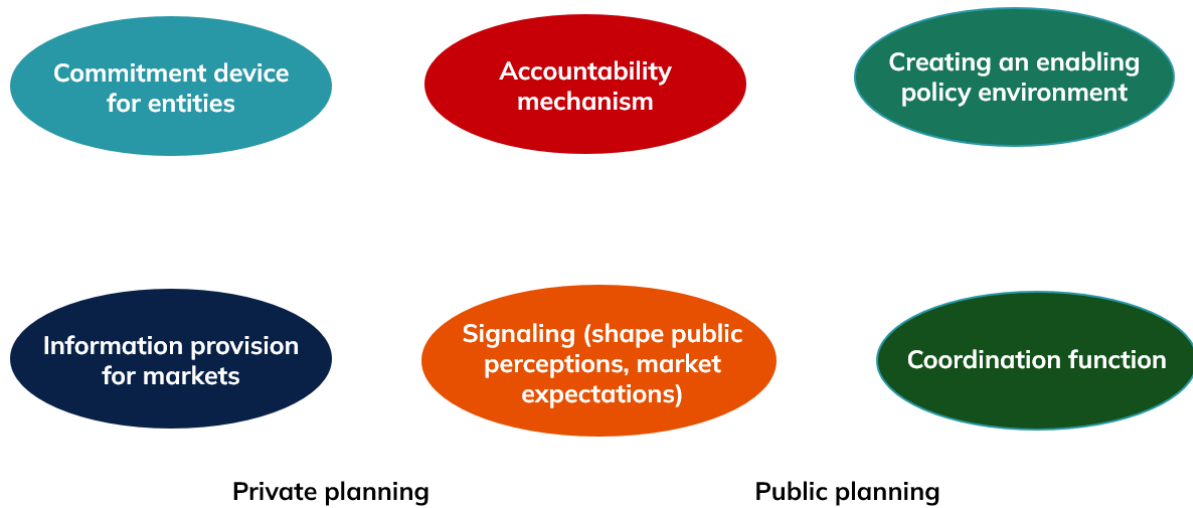
Finally, research has examined the relationship between public and private planning. This includes a consideration of the dynamics of coordination and alignment between and across states and markets. Jackson and Larsen (2025), for example, use the concept of green financial planning to describe *laissez-faire* responses by financial markets as they plan their economic activities with the macro-level state goal. Jahn and Manning (2025) imagine a more centrally coordinated approach, proposing a Transition Planning Coordination Architecture to combat fragmentation in transition planning.

## 2.1 Functions of transition plans

Transition planning has emerged as a policy tool to set targets by an entity and outline the steps needed to align themselves with a net-zero emissions pathway. Whereas transition planning refers to the process undertaken by an entity (public or private), transition plans are the output of this process outlining the multi-year targets and plans (NGFS, 2024).

In practice, transition planning rarely falls neatly into either “public” or “private” planning categories. Rather, it may often be hybrid in nature. This notion of hybrid planning is reflected in composite transition planning, further discussed in Section 4. Transition planning can serve different functions across the spectrum of public, private, and hybrid planning, described in Figure 1 below. For instance, they can serve as:

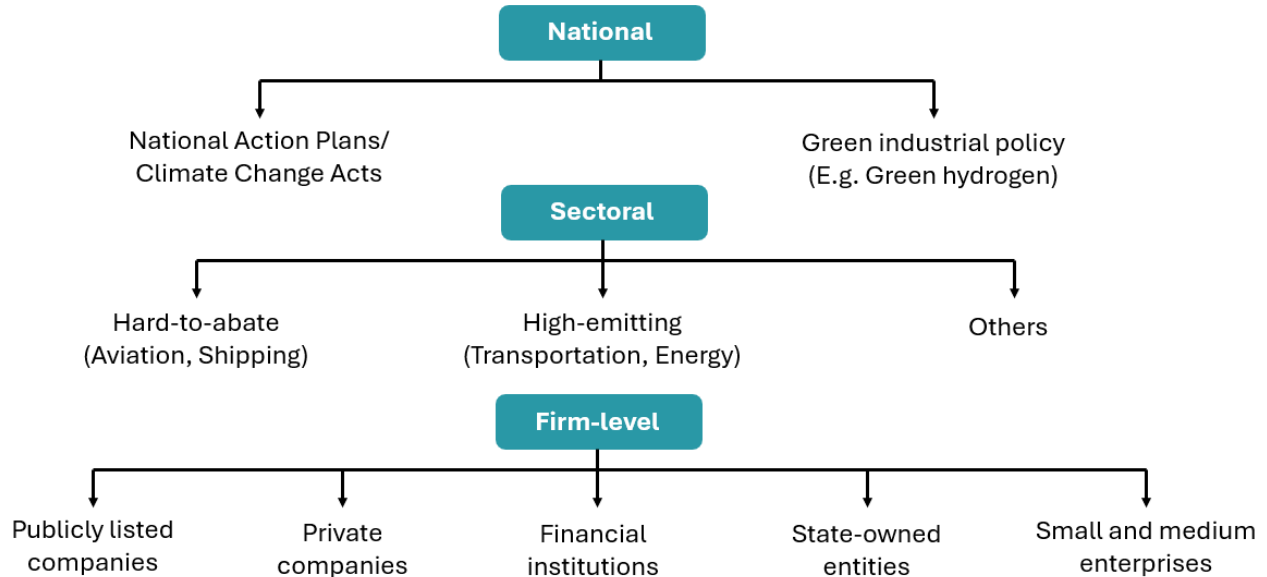
- A commitment device for entities to anchor their long-term goals and targets, for instance by creating a roadmap to guide entities’ internal decision-making (e.g. prioritisation, tradeoffs).
- A way for markets and regulators to gain more information about both individual and collective risks and opportunities around the transition.
- An accountability mechanism for others (e.g. investors and shareholders assessing corporate transition plans, or non-governmental organisations engaging in climate litigation against governments or companies) to hold them to account.
- A signaling device for governments and other actors to shape public perceptions and market expectations around future policies.
- A means of creating an enabling policy environment by aligning regulatory frameworks in support of transitioning economies.
- A coordination mechanism to align actions across sectors and levels of government, helping to manage interdependencies and support coherent transition pathways.

**Figure 1: Functions of Public and Private Green Transition Planning**

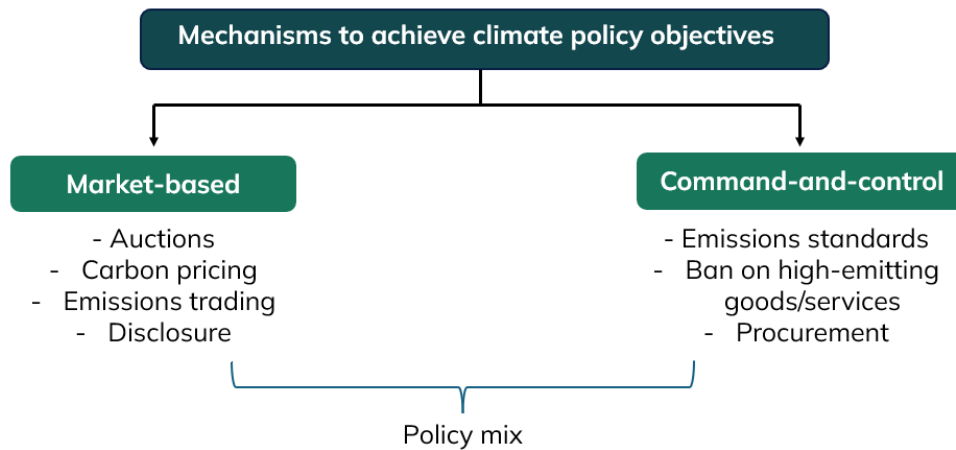
National-level transition plans create a broader enabling policy environment within which corporates and sector-specific actors are encouraged to act and develop their own ambitious targets and goals for the net-zero transition ([Smith School, 2024](#)). Rose et al. (2024) propose a framework and metrics for identifying, quantifying and managing the dependencies inherent in the successful implementation of corporate transition plans. These could be a function of external factors such as economic trends, technological advancements, policy environments, and sectoral transitions. Further, transition planning overlaps with several other policy instruments which are designed to make targeted entities act on their commitments. This includes access to transition finance, green public procurement, prudential tools, disclosure, phase-out or phase-down regulation, and green subsidies. For example, participation in Canada's Net Zero Challenge, which involves complying with a technical guide for developing corporate transition plans, is a condition for securing government contracts over \$25 million and may also be considered in federal funding programmes.

The interaction between public and private actors creates a logic of planning both across scales (from national to local) and actors (from governments to sector-specific actors to financial institutions). Further, the substantial approaches to planning for the green transition also vary across countries, broadly categorised into the use of market-based mechanisms, relying on markets to allocate emissions reductions outcomes among actors (such as setting sectoral emissions caps and allocating allowances to firms within the sector), or command-and-control methods which impose the same mandate on all actors (including banning the use of certain high-emitting or energy-inefficient machinery and equipment or phasing out coal power plants). Figures 2 and 3 below describe the logic of transition planning across public and private actors in terms of who is being asked to plan (targeted entity) and how (mechanism).

**Figure 2: The ‘Who’ of Green Transition Planning**



**Figure 3: The ‘How’ of Green Transition Planning**



Although a lot of attention has been paid to corporate transition planning as a significant tool to impose emissions accountability on private sector enterprises, including financial institutions, less research has focused on the significance of transition planning for other parts of the economy. In reality, we observe many different flavors and varieties of transition planning across countries. As this tool proliferates, the risk of fragmentation and redundancy emerges. In this context, this paper lays out the different ‘varieties’ of transition planning emerging across countries and examines the extent to which these are inter-operable and synergistic with each other.

### 3 Data and Methods

To showcase the governance of green transition planning across countries, we use data from the [Oxford Climate Policy Monitor](#) (OCPM) 2025 to extract characteristics of various types of transition planning policies observed across countries. The OCPM adopts an encompassing definition of transition planning, covering all “(P)olicy tools which recommend or require that entities develop, disclose, and/or implement targets or pathways towards decarbonisation”<sup>1</sup>.

In 2025, the dataset identified 214 transition planning policies across 36 out of 37 covered jurisdictions (excluding the United States). Of these, 142 targeted corporations (in 33 jurisdictions), 119 targeted sector-specific actors (in 35 jurisdictions), and 142 imposed obligations on governments (either national, sub-national, or local) (in 33 jurisdictions). Table 1 below provides summary statistics of each type of transition planning policy identified in the dataset.

**Table 1: Variety of Transition Planning Policies (by targeted entity)**

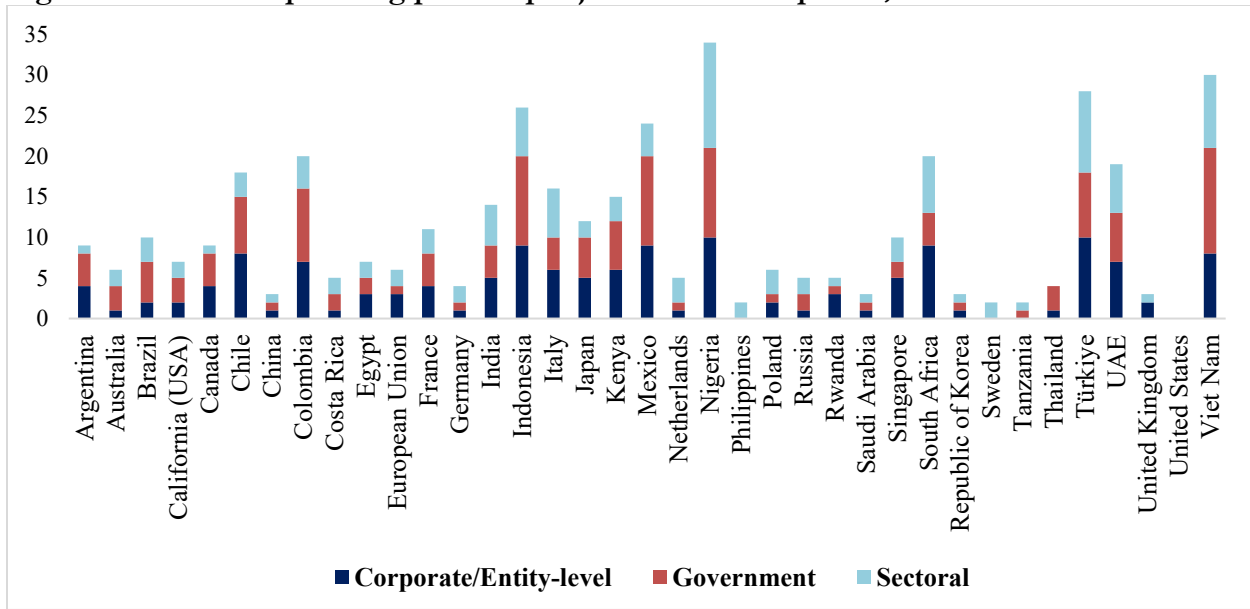
Targeted Entities	Number of jurisdictions	Number of policies
Corporate	33	142
Government	33	142
Sectoral	35	119

The OCPM dataset captures more than 60 data points per policy, law or regulation, providing granular details about features of the policy, the obligations they contain for targeted entities, and the extent to which its prescriptions are mandatory. This allows us to conduct an in-depth analysis and comparison of policies across jurisdictions. The broad scope of the dataset coupled with its granular coverage of policies facilitates a nuanced comparison of the content and pace of green transition planning governance across countries. Figure 4 below provides an illustration of the key issue areas governed or regulated under green transition planning policies across countries. For instance, Brazil’s *RenovaBio Program (National Biofuels Policy)* is a transportation sector policy aimed at increasing the use of biofuels in the country’s transportation mix using decarbonisation credits. Countries such as Japan use voluntary initiatives such as the *GX League* (GX: green transformation) to combine public and private planning by creating a voluntary ETS among participating firms.

<sup>1</sup> Retrieved from: <https://climatepolicymonitor.ox.ac.uk/methodology>



**Figure 5: Transition planning policies per jurisdiction: Corporate, Government and Sectoral**

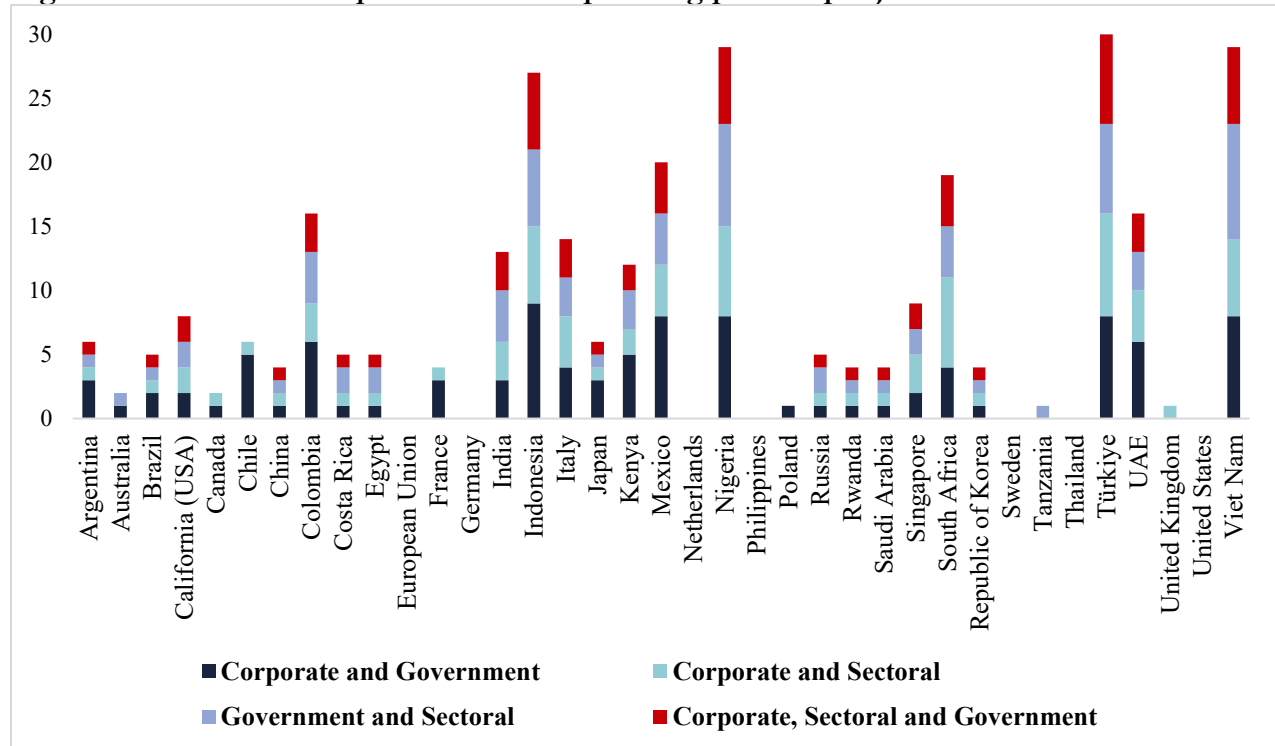


Additionally, the data also revealed composite transition planning policies that simultaneously target a combination of corporations, sector-specific actors, and national or sub-national government agencies. For instance: Mexico’s *Energy Planning and Transition Law (LPTE)* establishes planning, coordination, evaluation and participation instruments for energy transition and imposes transition planning obligations on high-energy producing private and state-owned firms, but also sets targets on the government for promoting the use of cleaner fuels. In our dataset, we find that policies in 23 jurisdictions can be classified as targeting corporations, sector-specific actors, and national or sub-national governments simultaneously. A distribution of these composite transition planning policies across jurisdictions is presented in Figure 6 below.

**Table 2: Composite Transition Planning Policies (by targeted entity)**

Targeted Entities	Number of jurisdictions	Number of policies
Corporations and Governments	28	99
Corporations and Sectoral actors	27	73
Governments and Sectoral actors	25	74
Corporate, Sectoral and Government actors	23	62

**Figure 6: Number of composite transition planning policies per jurisdiction**



#### 4 Typology of Transition Planning

Building on these high-level descriptive statistics of transition planning policies in our dataset by targeted entity, we delve deeper into policy texts to decipher the ‘who’, ‘what’ and ‘how’ of green transition planning across all covered jurisdictions. This is done using a mix of inductive and deductive coding, where survey data from the 2025 Oxford Climate Policy Monitor (OCPM) on targeted entities is combined with supplementary qualitative analysis of the objectives of these policies and their intended mechanisms (for example: disclosure, market-based mechanisms, mandates) through which policy targets are envisaged to be achieved.

We use these themes to present a typology of green transition planning policies. This is an extension of the typology developed by Dikau et al. (2025) who focus exclusively on planning by corporations and financial institutions to align their operations and businesses with a net-zero goal. While they classify transition plans into three categories based on their key objective (voluntary non-financial disclosure, mandatory non-financial disclosure, and prudential), we extend this classification to incorporate transition planning obligations embodied in the policy pathways adopted by sector-specific entities and national/sub-national players. Table 3 below provides a summary of the themes or codes that are captured under each of the three attributes of transition planning policies.

**Table 3: Governance of Transition Planning: Key Themes**

Who	What	How
Corporations	<ul style="list-style-type: none"> <li>- Prudential</li> <li>- Financial sector</li> <li>- Public and private planning</li> <li>- High-emitting sectors</li> </ul>	<p>Disclosure Emissions trading</p>
Governments	<ul style="list-style-type: none"> <li>- Coordination</li> <li>- Target-setting</li> <li>- Framework law</li> <li>- Finance</li> <li>- Adaptation</li> <li>- Energy sector</li> </ul>	<p>Policy mix Disclosure</p>
Sectoral Actors	<ul style="list-style-type: none"> <li>- Public and private planning</li> <li>- Maritime</li> <li>- Aviation</li> <li>- Shipping</li> <li>- Coordination</li> <li>- Energy</li> </ul>	<p>Policy mix Emissions trading</p>
Corporations and Governments	<ul style="list-style-type: none"> <li>- Energy sector</li> <li>- Public and private planning</li> <li>- Framework law</li> <li>- Target setting</li> <li>- Coordination</li> </ul>	<p>Policy mix Procurement</p>
Corporations and Sectoral Actors	<ul style="list-style-type: none"> <li>- Financial sector</li> <li>- Prudential</li> <li>- Voluntary</li> <li>- Energy sector</li> <li>- ESG</li> </ul>	<p>Disclosure Carbon pricing</p>
Governments and Sectoral Actors	<ul style="list-style-type: none"> <li>- Public and private planning</li> <li>- Framework law</li> <li>- Emissions reduction</li> <li>- Methane abatement</li> <li>- Sectoral decarbonisation pathways</li> </ul>	<p>Policy mix Standards Procurement</p>
Corporations, Governments, and Sectoral Actors	<ul style="list-style-type: none"> <li>- Public and private planning</li> <li>- Target-setting</li> <li>- Energy sector</li> <li>- Framework law</li> <li>- Coordination</li> </ul>	<p>Policy mix Carbon pricing Phase-out</p>

### *Corporate Transition Planning*

Among transition planning policies solely targeting corporate actors (which subsume publicly listed entities, private companies, financial institutions, state-owned entities and small and medium enterprises), we find that most policies are prudential in nature and target publicly listed and financial sector entities. For instance: Canada's Guideline B-15 on Climate Risk Management imposes an obligation on financial institutions to disclose their exposure to and management of climate-related risks. Similar policies, sometimes also implemented by stock exchanges (such as in South Africa: *JSE Climate Disclosure Guidance*; or Türkiye: *Determination of Turkish Sustainability Reporting Standards (TSRS)*), require climate disclosure as an eligibility criterion for companies to be publicly listed or be included in benchmark indices. Finally, we see a small but growing subset of policies using private planning to ratchet ambition for the net-zero transition. For instance: Canada's *Net Zero Challenge* is a voluntary tool aimed at encouraging businesses to develop and implement credible and effective plans to transition their facilities and operations to net-zero emissions by 2050. Similarly, Egypt's *National Initiative for Smart Green Projects* promulgated by Prime Minister Decree No. 2738 of 2022 promotes the identification, development and support of smart green projects by encouraging individuals and businesses to adopt innovative practical solutions for climate change mitigation and adaptation.

### *National-level Transition Planning*

Public planning by governments for the net-zero transition captures the most heterogeneity in terms of the multiplicity of objectives and mechanisms to attain these. This is intuitive insofar as the net-zero transition requires a structural economic transformation and encompasses multiple activities and sectors. Whereas most transition planning policies exclusively targeting government agencies are framework laws focused on target-setting and coordinating among different ministries, they govern diverse areas including climate finance, biodiversity, resource management, and competitiveness, among others. For instance: Thailand's *Environmental Quality Management Plan 2023-2027* provides a framework for stakeholders to manage natural resources and the environment in a cost-effective and efficient manner, whereas its *National Industrial Development Master Plan* focuses on achieving sustainable development in industries whilst preserving the country's competitiveness. Countries like Canada<sup>2</sup> and Chile<sup>3</sup> also account for participatory governance in transition planning and explicitly account for the needs and voices of indigenous communities to be included in the net-zero transition.

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<sup>2</sup> Canada's *Regional Energy and Resource Tables and the Indigenous Climate Leadership Initiatives* are respectively aimed at including indigenous communities in identifying shared economic priorities for a low-carbon future in the energy and resource sectors and supporting self-determined action in addressing the climate priorities of the Indigenous People.

<sup>3</sup> Chile's *National Action Plan on Human Rights and Businesses* places emphasis on the protection of human rights in achieving sustainable development goals by businesses.

*Sector-specific Transition Planning*

Finally, sectoral transition planning policies primarily target hard-to-abate and high-emitting sectors or activities in an economy such as power and transportation and entail a mix of public and private planning. Among hard-to-abate sectors, the EU (and member countries) have policies in place targeting emissions from the maritime<sup>4</sup> and aviation<sup>5</sup> sectors, where the former are set out to be reduced using emissions intensity thresholds, and the latter are governed by mandating the use of sustainable aviation fuels. India's "Harit Sagar" *Green Port Guidelines 2023* provide voluntary guidance to all major ports to achieve quantified reductions in carbon emissions across the port ecosystem over defined timelines, through focused implementation of port interventions. The energy and transportation sectors are targeted in policies implemented by several countries including Brazil, Chile, Japan, Nigeria, Turkiye, and the UAE.

**Composite Transition Planning Policies***Targeting government actors and imposing firm-level obligations*

Since the green transition entails an economy-wide structural transformation, the governance of transition planning features an overlap of public and private planning. Transition planning policies targeting both governments and imposing firm-level obligations on corporations are predominantly geared towards decarbonisation of the energy sector, which are often composed of both state-owned and private entities. For instance: Argentina's *Guidelines and Scenarios for the Energy Transition to 2050*, Chile's *National Energy Policy 2022*, Nigeria's *National Renewable Action Plans*, and the UAE's *Energy Strategy 2050*, are aimed at setting targets for decarbonisation of the energy sector, improving energy efficiency of production processes, and enhancing the production of renewable energy. In these policies, the government sets a target upon itself for achieving emissions reductions from energy generation and distribution while imposing obligations or providing guidance to all energy installations to comply with these targets and improve their production processes.

The provision of green finance through instruments such as green bonds and loans and creating green taxonomies is another area of transition planning addressed through these composite policies. For instance: Indonesia's regulation on the *Issuance and Requirements for Debt Securities and Sukuk Based on Sustainability* provides guidelines for the issuance of sustainability-linked bonds by corporations. More

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<sup>4</sup> Regulation (EU) 2023/1805 of the European Parliament and of the Council of 13 September 2023 on the use of renewable and low-carbon fuels in maritime transport and amending Directive 2009/16/EC (*FuelEU Maritime Regulation*). The policy sets binding limits on the greenhouse gas intensity of energy used by ships above a certain tonnage operating in EU waters and mandates those ships to utilize on-shore power supply or zero-emission technology when docked at EU ports.

<sup>5</sup> Regulation (EU) 2023/2405 on ensuring a level playing field for sustainable air transport (*ReFuelEU Aviation*) imposes binding obligations on aircraft operators, aviation fuel suppliers, and Union airport managing bodies to reduce greenhouse gas emissions by promoting the uptake and supply of sustainable aviation fuels (SAFs).

broadly, Kenya’s *National Policy on Climate Finance* seeks to enhance the implementation of public finance management in relation to climate financing and establishes a national monitoring, reporting and verification framework for overview of financial flows, trends, sources and purposes.

#### *Targeting governments and sector-specific actors*

A similar overlap between public and private planning is seen in policies which impose obligations on both governments and sector-specific actors. These policies govern diverse sectors and issue areas such as reducing methane emissions from agriculture in Vietnam<sup>6</sup>, decarbonising the health sector in Australia<sup>7</sup>, establishing sectoral decarbonisation pathways in Nigeria<sup>8</sup> for energy, gas flaring, agriculture and land use, industry, and transport, and decarbonising maritime emissions in India<sup>9</sup> by transitioning the country’s harbour tug fleet from conventional diesel-powered vessels to green, zero-emission tugs. While this subset of policies are similar in content to the ones identified above which simultaneously target governments and impose entity-level obligations, they are much more high-level and strategy-setting in nature compared to the latter, which operationalise targets by requiring entities to act.

#### *Targeting sector-specific actors and imposing firm-level obligations*

Sector-specific policies imposing entity-level obligations (predominantly on corporate entities and financial institutions) are primarily prudential policies, often of a voluntary nature, targeting financial institutions including banks, insurers, and asset managers. This includes Singapore’s *Sustainability Reporting Guide*, the *BRSA Sustainable Banking Strategic Plan* in Türkiye, South Africa’s *guidance notes on climate-related governance and risk management for banks and insurers*, and the UK FCA’s *ESG sourcebook*. High-emitting sectors are the other majorly governed area, for instance through carbon pricing in Canada’s *Output-Based pricing System*, or through phase-outs of coal-fired power plants in Chile and France.

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<sup>6</sup> *Decision 1693/QD-BNN-KHCN* issued by the Ministry of Agriculture and Rural Development (now the Ministry of Agriculture and Environment) approves a comprehensive plan to mitigate greenhouse gas (GHG) emissions—including methane—from the agriculture and rural development sector, with targets set through 2030 and a strategic orientation extending to 2050

<sup>7</sup> Australia’s *National Health and Climate Strategy* is perhaps the only policy which comprehensively covers the health impacts of climate change and conversely, the emissions generated by the healthcare sector (encompassing emissions from built environment and energy use, ambulances, and manufacturing and disposal of medical waste).

<sup>8</sup> *Sectoral Action Plans* for Nigeria’s Nationally Determined Contribution (NDC) to the UNFCCC. Source: <https://climatechange.gov.ng/wp-content/uploads/2020/09/final-nigeria-ndc-sector-action-plans.pdf>

<sup>9</sup> India’s *Green Tug Transition Programme (GTTP)* implemented in 2024.

*Targeting governments, sector-specific actors, and imposing firm-level obligations*

Finally, the most comprehensive transition planning policies in our dataset impose discrete obligations on government agencies, sector-specific actors, down to individual entities including publicly listed and private companies. We find 62 such policies across 23 jurisdictions in the dataset, covering both advanced and emerging economies. Several policies of this type are framework laws wherein the national (or sub-national) government sets a target for itself to achieve emissions reduction or ramp up the availability of renewable energy and imposes obligations on specific sectors and entities to comply with these targets using emissions inventories, such as in Argentina<sup>10</sup>, Colombia<sup>11</sup>, South Korea<sup>12</sup>, and Turkiye<sup>13</sup>.

However, we also see policies regulating discrete areas pertinent to the net-zero transition, such as green industrial policy to encourage the deployment of green hydrogen in India<sup>14</sup> and Turkiye<sup>15</sup>, methane abatement policies in the oil and gas and agriculture sectors in California<sup>16</sup>, Mexico<sup>17</sup>, Nigeria<sup>18</sup>, and Viet Nam<sup>19</sup>, and transition planning to decarbonise the energy sector using both command-and-control mechanisms (phase out of fossil fuels) and carbon pricing. For instance: Nigeria's *Energy Transition Plan (ETP)*, which forms the backbone of its climate commitments, calls for

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<sup>10</sup> Argentina's *Law on Minimum Standards for Global Climate Change Adaptation and Mitigation (Ley de Presupuestos Mínimos de Adaptación y Mitigación al Cambio Climático Global)* was implemented in 2019.

<sup>11</sup> Colombia's *Law 2169 of 2021 "By which the country's low-carbon development is promoted by establishing minimum targets and measures regarding carbon neutrality and climate resilience, and other provisions are enacted"* was implemented in 2021.

<sup>12</sup> South Korea's *Framework Act on Carbon Neutrality and Green Growth for Coping with the Climate Crisis* was passed in 2022.

<sup>13</sup> Turkiye's *Climate Change Mitigation Strategy and Action Plan (2024-2030)* was published in 2024.

<sup>14</sup> India's *National Green Hydrogen Mission* was published in 2022.

<sup>15</sup> *The Republic of Türkiye Hydrogen Technologies Strategy and Roadmap (Türkiye Hidrojen Teknolojileri Stratejisi ve Yol Haritası)* was published in 2023.

<sup>16</sup> California's *Senate Bill No. 1383 of 2016 and Final Short-Lived Climate Pollutant Reduction Strategy* was published in 2017.

<sup>17</sup> Mexico's *General administrative provisions that establish the guidelines for the prevention and integral control of methane emissions from the hydrocarbon sector* was passed in 2018.

<sup>18</sup> Nigeria's *National Action Plan to Reduce Short Lived Climate Pollutants (SLCPs)* was published in 2018.

<sup>19</sup> Viet Nam's *Decision No. 942/QĐ-TTg Approving Action Plan for Methane Emission Reduction by 2030 (the "Action Plan")* was issued by the Prime Minister dated 5 August 2022.

over \$410 billion in financing to reach net-zero by 2060, covering five core sectors — power, cooking, transportation, oil and gas, and industry. The policy outlines using the carbon market as a complementary mechanism to support these goals, with the Global Climate Change Investment Fund expected to channel blended finance into priority areas like clean energy mini-grids, e-mobility and green industrial hubs<sup>20</sup>.

## 5 Discussion: Interoperability between Different Types of Planning Exercises

A variety of transition planning policies targeting different entities and activities can create problems of interoperability and coordination. This could lead to an *unevenness* in planning, with some sectors or entities being over-targeted by planning whereas others being under-targeted. Moreover, the emergence of a variety of transition planning policies also creates a potential issue of planning being *siloed* and not accounting for the coordination required across actors to ensure coherence and alignment in setting targets and plans. Lastly, the interaction between different *mechanisms* or *instruments* (*broadly market-based or command-and-control*) envisaged in transition planning exercises to achieve objectives can create unintended (dis)incentives for firms and send confusing signals to markets. Table 4 provides an overview of key dimensions of transition planning policies across which issues of interoperability could arise.

**Table 4: Conceptual Mapping of Dimensions of Transition Planning Policies**

Dimension	Scope for synergies (or issues for contention)
<b>Scale</b>	Are entities targeted in a balanced or uneven way (global, national, sectoral corporate)? Does the coordination (or lack thereof) between different types of transition planning policies create siloes?
<b>Scope</b>	What activities does the transition planning policy cover (Climate mitigation, climate adaptation, just transition, nature)? What is the scope of the transition planning policy in terms of the functions or objectives it performs?
<b>Mechanism</b>	Does the combination of command-and-control and market-based mechanism in transition planning policies create aligned or overlapping incentives for the same entity?

<sup>20</sup> Source: <https://www.fastmarkets.com/insights/nigeria-finalizes-carbon-market-policy-targets-2-5-bltn-in-climate-investment-by-2030/>

Cross-country policy data allows us to tease out both examples of good practices where these issues have been overcome by policies, for example, targeting both public and private actors or devising innovative accountability mechanisms which allow the private sector to voluntarily ratchet their ambition beyond minimum requirements, and instances where a multiplicity of transition planning regulations creates duplicity and conflicting demands upon targeted entities to comply with obligations.

### **5.1 The Scale Issue: Aligning targets and plans across different levels of planning**

Given the different scales or levels at which transition planning is conducted, from the international level at the UNFCCC down to sub-national or local levels, a potential for unevenness and lack of cohesion could emerge between transition planning obligations. On one hand, the varying scales are needed to plan efficiently and granularly, since national level targets create an umbrella under which individual sectors and entities within those sectors can design and implement strategies to decarbonise. In this vein, composite transition planning policies targeting both public and private actors at varying levels could overcome these issues by ensuring coherence in targets from the national to entity-level actions. For instance: Nigeria's *Energy Transition Plan* outlines strategies and timelines for reducing emissions across five key sectors: oil and gas, power, transport, cooking, and industry.

However, multiple policies which work in isolation across different levels could also create a multiplicity, and oftentimes, a contradiction in obligations imposed on the lowest targeted unit. For instance: Transition planning at the local and national scales in Denmark demonstrates this contradiction in setting and achievement of targets across levels of governance. Denmark operates on a highly decentralised structure with significant autonomy of sub-national units. Consequently, national and local authorities develop their own targets and Climate Action Plans but there is lack of alignment between the two (Sperling et al., 2011) or even across transition plans developed across two municipalities (Damsø et al., 2016). Sperling et al. (2011) report that energy planning across municipalities in Denmark remains disjointed with national renewable energy planning, insofar as municipal-level plans are not detailed enough to align with the national target of reaching 100 percent renewable energy consumption. This issue partly arises from the fact that the national target does not provide a clear institutional framework for municipalities to transition towards renewable energy in an explicit manner, leaving considerable discretion at the hands of municipalities to adopt diverse decarbonisation pathways which may not contribute evenly to the national target.

Having multiple policies also creates coordination and accountability challenges across actors. Two functions of a transition plan, particularly targeting governments or sector-specific actors, are to coordinate across ministries or diverse actors and create an accountability mechanism. Our dataset reveals policies which explicitly create an institution entrusted with one or both of these functions. For instance: Chile's *Framework Law on Climate Change*, adopted in 2022, creates a legal framework to assign specific responsibilities to different agencies or ministries for the implementation of climate

change mitigation and adaptation measures. It is an overarching law setting out long-term emissions reduction targets, supplemented with mechanisms to achieve this including creating a national inventory of GHG emissions, establishing sectoral decarbonisation pathways, and creating financial mechanisms to support mitigation and adaptation initiatives.

However, a further dimension here is the interaction of transition planning policies with framework laws and the accountability mechanisms in these policies to ensure compliance and effectiveness (Higham et al., 2021). This remains a significant issue in the realm of policy implementation and translation of obligations into policy outcomes, encapsulating the trade-offs between efficiency and comprehensiveness (Bauer et al., 2024).

A final aspect pertains to defining a ‘corporation’, particularly in corporate transition planning regulations. Usually, these refer to publicly listed and large private companies (based on number of employees, or revenues, and so on). In some countries, state-owned companies have a unique ownership structure such that they might be beyond the scope of these regulations. At the same time, they also operate in strategically significant sectors such as electricity production and distribution or hard-to-abate sectors such as shipping. Sectoral transition plans in some countries impose obligations on state-owned enterprises (SOEs) to undertake energy efficiency improvements and set targets for phasing out high-emitting assets.

## 5.2 The Scope Issue: One plan, multiple objectives

Green transition planning policies cover a wide spectrum of issues that impact the degree and pace of climate change mitigation and adaptation. This includes economic objectives such as the preservation of economic growth and competitiveness (for example: Turkiye’s *Green Deal Action Plan 2021*, Egypt’s *National Climate Change Strategy*, and Thailand’s *National Industrial Development Master Plan 2012-2031*) and ensuring green jobs (for example: Canada’s *Requirements under the Sustainable Jobs Act* and Australia’s *Net Zero Economy Authority Act*). Since climate and nature are intrinsically linked, several policies go beyond climate mitigation to preserve biodiversity and natural resources. For instance: Mexico’s *General Law on Ecological Balance and Environmental Protection* regulates human activities that may affect the environment, in order to preserve and restore the ecological balance, protect natural resources, prevent and control pollution, and guarantee the right to a healthy environment.

The inclusion of indigenous communities in the planning process and ensuring a just transition are also addressed in several policies across countries including Canada, Chile, Colombia, and South Africa. Finally, a handful of policies cover issues such as circular economy and waste (for example: India’s *Battery Waste Management Rules*, Mexico’s *National Strategy for Circular Economy*, and Vietnam’s *Scheme on Circular Economy Development*). Few others aim to expand international or regional cooperation in climate change, combining diplomacy and geopolitics with the green transition. For instance: China launched in 2022 its *Opinions on Jointly Promoting Green Development of the Belt and Road Initiative*, which

advocates for enhanced international collaborations pertaining to sustainable development within selected sectors including green infrastructure creation, renewable energy, eco-friendly transport systems, and sustainable financial practices. Similarly, Saudi Arabia's *Saudi and Middle East Green Initiative* aims to leverage regional resources and knowledge sharing to support efforts towards decarbonisation in the region. The policy is supported by a secretariat and is allocated funds to support climate mitigation activities, together with the creation of the Saudi Green Initiative Organisation to monitor activities and provide strategic direction.

Further, some transition planning policies are more encompassing and expansive in scope, covering multiple sectors and activities. For instance: India and Türkiye's national-level green hydrogen policies are horizontal green industrial policies (Hallegatte et al., 2013; Meckling, 2021) setting out a plan for the production, deployment and scaling of green hydrogen across different sectors and production processes in, for instance, hard-to-abate industries such as manufacturing.

### 5.3 Mechanisms to Implement Plans: Command-and-control or market-based

Several, though not all, transition planning policy documents also lay out the mechanisms or policy instruments through which decarbonisation targets will be achieved. Although a range of policy instruments could be used to achieve targets, we broadly divide them into market-based mechanisms (which rely on markets to achieve an efficient allocation of outcomes, for example, through disclosure or carbon pricing schemes), and command-and-control methods (encompassing a more interventionist role of the state by mandating regulatory bans or phase-outs that apply equally to all entities in a particular sector or activity). We find that a majority of policies specify a policy mix of both these approaches to achieve climate objectives, particularly framework laws, which rely on carbon pricing for high-emitting sectors combined with more command-and-control state support for hard-to-abate or strategic sectors. However, some heterogeneity persists across the different types of transition planning policies.

In corporate transition planning policies, there is a predominant reliance on market-based mechanisms, such as disclosure of emissions, risks, and climate-related targets and plans to enhance transparency and facilitate incorporation of climate-related risks by financial market participants. Planning by corporations and financial actors can further be conducted on a prudential motive (assessing the risks and opportunities emerging from climate change and the transition), or to fulfil disclosure requirements (Dikau et al., 2025).

In high-emitting sectors, some policies rely on carbon pricing schemes combined with entity-level transition plans to achieve decarbonisation. For example: Under the revised EU ETS, to receive free allocations, installations with GHG emissions intensities above a specified threshold must submit a climate neutrality plan at the installation level. Similarly, Brazil's *RenovaBio Program (National Biofuels Policy)* is aimed at a green transition of the transportation sector (comprised of state-owned and private

firms) using decarbonisation credits. The policy targets all fuel distributors within the country and aims to reduce carbon intensity of the transportation fuel matrix by increasing the production and utilisation of biofuels. Under the program, annual national decarbonisation targets (developed for a period of 10 years) are allocated to all fuel distributors based on their market share of fossil fuels. Producers of biofuels earn decarbonisation credits (CBIOs) based on the amount of emissions they help reduce compared to a baseline. Fossil fuel distributors are mandated to purchase a certain number of CBIOs each year, proportional to their sales volume, to meet the overall carbon intensity reduction targets. This creates a market where biofuel producers sell CBIOs to fossil fuel distributors, incentivising the production and use of biofuels and reducing overall carbon emissions in the transportation sector.

Market-based mechanisms are typically more flexible, allowing targeted actors to evaluate costs and benefits at the margin (for example: firms with a higher cost of abatement under a covered ETS can choose to buy emissions allowances over the short term rather than investing in expensive technologies to reduce own emissions intensities). On the contrary, mandates which impose the same requirements (for example: emissions quotas, phase-out targets, renewable energy procurement) on all actors are more rigid and may not account for differential costs of production of individual firms.

Does the interaction of these policies create misaligned incentives for targeted firms? Evidence suggests that the co-existence of carbon pricing with command-and-control policies dilutes the effectiveness of the former. Anke et al. (2020) examine the case of the EU ETS, which exists alongside national regulatory policies implemented by member states encompassing coal phase-outs, energy efficiency standards, and state support for scaling up renewable energy. They argue that since the effectiveness of an ETS relies on: (i) a high enough carbon price, and (ii) a declining emissions cap for total emissions, regulations such as coal phase-outs (without a corresponding lowering of the overall emissions cap) result in an excess supply of emissions allowances over demand, leading to a decline in the carbon price which dilutes the incentives for remaining entities in the sector to decarbonise, termed the “waterbed effect” (Rosendahl, 2019).

Further, the choice of mechanism is also predicated upon the policy objectives envisaged to be achieved, the state of enabling market infrastructure, and the capacity of the implementing authority. We illustrate this point using a case study of Mexico’s *Energy Transition Law (LTE)*, a sectoral (energy sector) policy for state-owned and private entities using auctions (a market-based approach), which was recently superseded by the *Energy Planning and Transition Law (LPTE)* in 2025.

The *Energy Transition Law*, passed in 2015, sought to incorporate, from its inception, a national energy planning framework aligned with the transition toward a cleaner and decarbonised system, without compromising energy security, social justice, or productive competitiveness. It established that the Ministry of Energy, through Clean Energy Goals and Energy Efficiency Goals, will promote power generation via clean energy sources to allow industry to comply with standards established in Mexico’s *General Climate Change Law* and *Electric Industry Law*. Participants in the electric industry in general, whether state-owned or private companies, are obliged to contribute to compliance with the Clean

Energy Goals. Under the law, electricity producers and large consumers of electricity that rely heavily on fossil fuels should purchase Clean Energy Certificates from the government, which in turn invests those funds either in developing clean energy projects in regions where it is not currently available or in expanding existing projects.

While the previous version of the law (the *Energy Transition Law*) relied on setting energy efficiency targets for the whole energy sector, its updated version in 2025 more directly laid out the obligation of the government to plan the direction of development of the sector, not establishing some proportional obligation to everyone in accordance with their emissions contributions, but directly limiting which fossil fuel projects can even be built, and establishing new regulatory highspeed lanes for projects and technologies that are priorities (for example: solar energy). An interview with one of the key architects of the law suggests that the evolution of this policy reflects the changing nature of the renewable energy market and the place it is foreseen to occupy in the country's energy mix. In the early stages, the policy's objective was to create an incentive for energy sector producers (and consumers) to modify the energy mix by incorporating more renewable energies (RE). However, the new law envisages a more systemic structural transformation of the energy sector where renewables constitute the baseline source of power rather than a supplementary add-on to fossil fuels.

*“In my view the difference is like this: LTE thought about obligation as a % because it was about increasing the share of RE, while the new LPTE considers that in the long term most electricity will come from RE and therefore the government needs to create a system that is ready for a decarbonized system.”*

An interesting third mechanism emerges from our analysis of green transition planning policies wherein public and private planning intersect in a voluntary manner to ratchet the private sector's ambition towards decarbonisation. For instance: Japan's *GX League* illustrates the interaction between public and private planning for the net-zero transition using a voluntary ETS, among other mechanisms. In 2022, Japan established the *GX League*, a forum for cooperation between a group of companies and the government, universities, and academic institutions to meet greenhouse gas reduction targets and increase industrial competitiveness by using Japan's goal of carbon neutrality by 2050 as an opportunity for economic growth. Currently, companies from various industries that endorse the *GX League* are working together to develop a vision of the future society, make rules for market creation, and prepare a carbon credit exchange scheme with the aim of having the league fully operational and mandatory from April 2026 onward. Under this policy, GX-ETS is a voluntary emissions trading platform wherein GX members set their own emissions reduction targets, disclose their progress, and work to achieve them<sup>21</sup>.

Similarly, Canada's *Net Zero Challenge* is a voluntary initiative that aims to encourage businesses to develop and implement credible and effective plans to transition their facilities and operations to net-

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<sup>21</sup> Source: [GXL FOR WORLD | GXリーグ公式WEBサイト](#)

zero emissions by 2050. Egypt's *National Initiative for Smart Green Projects* likewise establishes a comprehensive national framework that promotes the identification, development, and support (through funding support) of smart green projects across the country.

## 6 Conclusions

This paper unpacks the governance of green transition planning regulations across jurisdictions, focusing on the 'who', 'how' and 'what' of transition planning policies and examining the interoperability therein. Our findings suggest a rich and emerging set of rules governing various aspects of achieving an economy-wide net-zero transition, shedding light on oft-underappreciated and innovative policy approaches emerging beyond western neoliberal contexts across countries in Asia, Africa, and Latin America.

Future studies can build on this to examine the political economy drivers of green transition planning (Eckersley, 2022; Kus & Jackson, 2025; Zimmermann, 2024). Given the overlap of public and private planning in this sphere, the governance of decarbonisation and role of the state is likely to vary across state types ranging from neoliberal market states (MacNeil & Paterson, 2012) to corporatist structures (Kronsell et al., 2019) to developmental states (McGreevy & Chia, 2024). Our granular data can be used to map and assess how transition planning varies across different states and the relative importance of public vs private planning across these.

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