

Governance pathways to credible implementation of net zero targets

Alina Averchenkova and Tiffanie Chan

October 2023

The Centre for Climate Change Economics and Policy (CCCEP) was established in 2008 to advance public and private action on climate change through rigorous, innovative research. The Centre is hosted jointly by the University of Leeds and the London School of Economics and Political Science. It is funded by the UK Economic and Social Research Council. More information about the ESRC Centre for Climate Change Economics and Policy can be found at: www.cccep.ac.uk

The Grantham Research Institute on Climate Change and the Environment was established in 2008 at the London School of Economics and Political Science. The Institute brings together international expertise on economics, as well as finance, geography, the environment, international development and political economy to establish a world-leading centre for policy-relevant research, teaching and training in climate change and the environment. It is funded by the Grantham Foundation for the Protection of the Environment, which also funds the Grantham Institute for Climate Change at Imperial College London. More information about the Grantham Research Institute can be found at: <http://www.lse.ac.uk/granthaminstitute/>

About the authors

Alina Averchenkova is a Distinguished Policy Fellow at the Grantham Research Institute on Climate Change and the Environment.

Tiffanie Chan is a Policy Analyst at the Grantham Research Institute on Climate Change and the Environment.

Acknowledgements

This work was made possible with a grant from the European Climate Foundation. The authors also acknowledge support from the Grantham Foundation for the Protection of the Environment and the Economic and Social Research Council.

The authors would like to thank Lara Lázaro-Touza, Katherine Cooke, Catherine Higham and Naghmeh Nasiritousi for their valuable insights and helpful review comments on this report. They are also thankful for comments on the study provided at the ECPR conference in Prague in September 2023, by the members of the Governance and Legislation research group at the Grantham Research Institute on Climate Change and the Environment and the members of the European Climate Governance Hub, whom they consulted at various stages of the study.

This report would not have been possible without the interviewees who shared their fascinating insights and to whom the authors are tremendously grateful for their generous contributions.

Natalie Pearson and Georgina Kyriacou copy-edited the report.

The views expressed in this report represent those of the authors and do not necessarily represent those of the host institutions or funders. Any errors and omissions remain those of the authors. The authors declare no other relationships or activities that could appear to have influenced the submitted work.

This paper was first published in October 2023 by the Grantham Research Institute on Climate Change and the Environment and the Centre for Climate Change Economics and Policy.

© The authors, 2023

Licensed under [CC BY-NC 4.0](https://creativecommons.org/licenses/by-nc/4.0/). Commercial permissions requests should be directed to the Grantham Research Institute.

Suggested citation: Averchenkova A and Chan T (2023) *Governance pathways to credible implementation of net zero targets*. London: Grantham Research Institute on Climate Change and the Environment and Centre for Climate Change Economics and Policy, London School of Economics and Political Science.

Contents

Summary	2
1. Introduction	8
2. Drivers for net zero commitments	12
3. Forms of political and legal commitment to net zero	26
4. Linkages to core climate governance functions in net zero laws	29
5. Fiji and Spain: Integration and implementation of net zero commitments into governance systems	35
6. Conclusions and recommendations	40
References	44
Appendix 1. Methodological notes	50
Appendix 2. Assessment criteria for linkage of net zero laws to the climate governance functions	52
Appendix 3. Linkages to climate governance functions in Fiji and Spain's net zero laws: authors' analysis and interviewees' assessment	55
Appendix 4. Laws with net zero targets	61

Summary

Achieving the Paris Agreement goal of limiting global temperature rise to 1.5°C requires an urgent ramp-up of political ambition through commitments to net zero targets and integration of those targets firmly into national governance frameworks. More than 70 countries have set national net zero targets, but as of October 2023, only the European Union and 29 countries have passed targets into legislation. Multiple scientific reports from UN bodies and others continue to indicate worrying shortfalls in the ambition, implementation, and credibility of national commitments to reaching net zero emissions. Strong national governance is essential to address these gaps.

In this context, it is important to understand what drives political commitments to net zero and how different elements of national governance systems can firstly, support the translation of these commitments into legal frameworks and policies, and secondly, enable their sustained and effective implementation.

A **governance pathway** towards net zero encompasses progression from the initial announcement of the political commitment to the target (or an equivalent objective), through to the integration of this commitment into domestic legal frameworks and then ensuring that key institutional frameworks and processes are in place to enable credible implementation. The analysis in this report can help support countries in different stages of their governance pathway towards net zero.

Drivers of political commitment to net zero

Governance pathways to net zero vary from country to country. These pathways are influenced by many shared drivers and challenges, albeit with nuances and interactions that are unique to each national context.

We identify the following 'drivers' that move governments towards making net zero promises, integrating and implementing them:

- **International peer pressure and leadership.** Countries may feel pressured by their peers to adopt net zero commitments, may exert pressure on others to do the same, or may seek to demonstrate leadership in international fora. Prominent politicians play a key role here.
- **Supranational legal requirements.** Obligations under the Paris Agreement or the EU regulatory framework push governments to act with greater foresight and ambition.
- **Historical context and political culture.** A country's political tradition of leading by example or its identity as a young independent state may influence early adoption of net zero commitments.
- **Economic opportunities and access to finance.** The ability to communicate the economic benefits of a net zero transition galvanises support for implementation. In developing countries, the role of donors in mobilising finance is key.
- **Domestic social pressure and just transition.** Campaigning, litigation, public opinion surveys and engagement with politicians can exert social pressure on governments. Framing just transition as part of the net zero debate can be a key differentiator of whether social pressure becomes a driver or a barrier to net zero.
- **Political party competition.** Domestic political pressure can make parties amplify their climate ambitions to attract votes. However, the reverse could occur where societies are politically polarised.

- **Climate vulnerability.** Vulnerability to the impacts of climate change makes climate change a more salient political issue. This prioritisation on the political agenda can encourage more ambitious climate commitments.
- **Science and knowledge.** Global consensus on the scientific argument for net zero and the availability of credible nationally-owned and country-specific data enables net zero commitments.

By amplifying important drivers relevant to a specific country, political ambition on net zero can be increased, and its effective implementation can be advanced.

We consider how these drivers intersect with key actors and strategies to present a framework for assessing governance pathways towards net zero commitments.

Drivers – insights from case studies on Fiji and Spain

This report examines two case study countries, Fiji and Spain, to understand the drivers and challenges at all three stages of a net zero governance pathway and to compare the pathways in a developing and a developed country. These countries are notably different in terms of their socioeconomic status, emissions profile and vulnerability to climate change, but both have integrated net zero targets in their national legislation and are in the process of implementation.

In both countries, the importance of international peer pressure, drive for leadership and supranational legal requirements as drivers for net zero commitments reaffirms the need for strong international processes and agreements on climate change in enabling domestic action globally. Through its ambitious leadership stance and demonstration of commitment to net zero – all while battling severe climate change impacts at home – Fiji aspires to influence other countries, especially large emitters, to follow suit. In our other case study, the leadership and regulatory framework of the EU strongly influences Spain’s governance pathway to net zero.

The economic and social benefits of decarbonising economies can be powerful drivers for net zero commitments. Examples include improved energy security, access to climate finance and greener investment, and leadership in low-emission technology markets. Despite differences in their national contexts, the message of economic opportunity and a just transition in delivering net zero were found to be important drivers in both Fiji and Spain. In taking ambitious steps to committing to net zero, Fiji hopes to gain increased support through international climate finance to pay for both its mitigation and adaptation needs. This expectation should be met by the international climate finance community and, if successful, may lead to greater diffusion of net zero policy and increased global ambition.

The failure of policy to address the disproportionate burdens placed on some parts of society and the potential social costs of net zero can create opposition and hinder the transition. In Spain, framing the net zero debate around economic opportunities and a just transition is an effective strategy for strengthening political support and buy-in.

Integration of net zero into national governance systems

Political promises that commit to net zero take different forms across different countries, including: pledges by heads of state; statements in domestic political debate; election-related documents; UNFCCC-related documents; presidential documents or executive orders; and executive policy documents. Following a country’s political promise of a net zero target, the significant task of making this pledge a reality requires a whole body of supportive governance infrastructure.

There are many differences between countries, but nine core climate governance functions¹ have been identified by researchers as essential to any country's effective climate response:

1. Narrative and long-term objectives
2. Strategy-setting with intermediate targets and review
3. Independent knowledge, evidence and advice
4. Horizontal mainstreaming across sectors
5. Vertical mainstreaming across subnational levels
6. Coordination
7. Inclusive stakeholder engagement
8. Finance mobilisation, channelling and delivery
9. Oversight and enforcement

These core climate governance functions can be used as a guide to help assess progress in integrating net zero commitments into national governance systems. Often, establishing or amending climate legislation to include net zero targets is a starting point for such integration.

Linkages to climate governance functions in net zero laws

To assist countries in developing robust governance frameworks and to provide internationally comparable data, we assess the linkages to the climate governance functions in 26 net zero laws, based on a detailed set of criteria in Appendix 2. This analysis shows that to date, the main focus has been on strategy-setting, and narrative and long-term objectives. There is less emphasis in the laws on establishing mechanisms to generate independent knowledge, coordination arrangements and on mainstreaming across sectors.

- In relation to **strategy-setting**, some laws directly prescribe obligations for governments to prepare decarbonisation strategies, or reference other legislation where those requirements are already set out. Linkages to strategy-setting functions may also appear through a clear mandate for government to develop key policy instruments targeted at reducing emissions.
- As explained above, conveying a message of opportunity around the long-term benefits of the transition is a key driver for implementation and helps to rally support for action. Yet, although most laws have clear **long-term objectives**, only some include a **positive narrative** of this kind.
- Of the laws assessed, 18 refer to, establish, or grant powers for government to establish a separate body to provide **expert advice**. However, just under half of these reference to any degree how the government may be required to respond to the advice.
- Even in the laws with strong linkages to governance functions, the involvement of subnational institutions and the requirement for **coordination** bodies to report to a senior level of government is not very clear.
- Some laws make reference to translating the net zero target into **sectoral actions**, but linkages to shared accountability across sectoral ministries, or to mechanisms for progress assessment by sectors, are significantly less clear.

A law that contains a net zero target is, of course, only one part of the overall legal and policy landscape of a country. Some elements of the climate governance system may be set up by another piece of legislation or executive instrument. The absence of reference to a particular climate governance function in a net zero law therefore does not necessarily mean that that

¹ Sridhar et al. 2022: Climate governance functions: towards context-specific climate laws.

function does not exist, but rather indicates which elements are considered most important. An analysis of the wider governance system is needed to establish a full picture of the extent to which net zero commitments are supported in national governance systems.

Implementation challenges across the governance system – case study insights

The existence of a particular climate governance function, and reference to it in a net zero law, does not automatically secure credible implementation. Feedback on how these governance mechanisms work in practice in Fiji and Spain, elicited from expert interviews, helps shed light on their effectiveness and relative importance.

Although net zero laws in Fiji and Spain make strong linkages to most of the nine core climate governance functions, both countries face implementation challenges in similar areas, namely: **coordination, mobilisation and channelling of finance, and horizontal and vertical mainstreaming**. In both countries, interviewees emphasised the practical difficulties of aligning policies with long-term objectives and overcoming implementation hurdles. Specific examples include:

Coordination and horizontal and vertical mainstreaming

- Although Fiji has made significant progress in setting up climate focal points in line ministries, competition for limited financial resources and technical capacity in the government creates challenges for a coherent climate response.
- As a multi-level state, Spain struggles to maintain efficient coordination between national and regional governments. This results in a fragmented regulatory landscape across autonomous communities, leading to delays in the rapid deployment of renewables.
- Autonomous communities face challenges in navigating the complexities of national and European-level climate legislation, causing delays in implementation at the regional level.

Finance mobilisation and channelling

- Raising sufficient finance via international and domestic channels was noted by interviewees in Fiji as the deciding factor in whether implementation of the Climate Change Act and the net zero target will be successful.
- In Spain, interviewees noted the barriers in deploying finance presented by a highly bureaucratic financial system, and the need to improve mechanisms for channelling finance to the regions.

Independent knowledge, evidence and advice

- While Fiji's law does not address independent knowledge directly, many interviewees referenced the importance of recent initiatives to develop monitoring, reporting and verification (MRV) systems and embed long-term consultants in the government to build capacity, much of which is enabled through international support.
- In Spain, all interviewees called for implementation of the requirement in the law to establish an independent advisory body and expressed frustrations around the delay in this process.

Inclusive stakeholder engagement

- In both countries, interviewees noted progress on stakeholder engagement, but stressed the need to improve public participation. While interviewees had mixed views on the usefulness of current oversight and enforcement mechanisms, it was broadly recognised that there is room for increased scrutiny, accountability and transparency from the governments.

Identifying these challenges can prompt policymakers to redirect their attention to areas that can facilitate progress towards net zero.

Recommendations

Building and maintaining political commitment to net zero:

- **Governments, civil society, businesses and funding providers** should recognise the crucial importance of strengthening national governance systems to ensure sustained political commitment and credible implementation of net zero globally.
- **International organisations, national governments and civil society** should work towards strengthening the effectiveness of the UNFCCC process and other relevant international climate change fora, ensuring they provide strategic guidance and support mechanisms for pathways to net zero. They should also build trust in the process.
- **Knowledge providers and international networks of civil society, businesses, legislators and governments** should systematically gather knowledge and strengthen exchange and capacity-building internationally and domestically across all levels of governance on specific experiences of using the drivers for net zero to create, and maintain, political commitment and public support.
- **International climate finance providers** should deliver greater support to developing countries that, like Fiji, are taking ambitious commitments towards net zero, and focus support on their overall climate and development-related needs, including building resilience to climate change risks, adapting to its effects, and utilising synergies between adaptation and mitigation responses.
- **Politically active organisations like NGOs, business associations, and think tanks should:**
 - Identify and support the development of climate champions that can act on political windows of opportunity to push for net zero commitments.
 - Exert social pressure through a variety of strategies best suited to the national context, such as: framing the debate around benefits of net zero and a just transition; running campaigns; forming coalitions across sectors and types of stakeholders; carrying out public opinion surveys and advocating public participation (such as in citizens assemblies), and climate litigation.

Governance systems that enable net zero implementation:

- **Governments should strengthen capacity-building on climate change at the national, subnational, and sectoral level, with the assistance and expertise of local and international NGOs and the broader research community.** Actions may include:
 - Ensuring that measures are in place to retain staff in key ministries, ensuring that the coordination and implementation of net zero commitments are owned and led by the country itself. This could include providing incentives, planning career pathways and succession planning.
 - For example, in Fiji, given the Climate Change Act has not yet formally commenced, there is a need to continue raising awareness about its provisions and strengthen capacity for its implementation among the relevant governmental departments, e.g. through targeted workshops on parts of the Act relevant to each institution's mandate.
 - For international climate finance providers, continuing to support such capacity-building initiatives in developing countries.
- **Governments should ensure ministerial departments and agencies have sufficient mandate, and financial and human resources,** to translate net zero into specific legislation and policies and oversee implementation.

- **Governments should strengthen coordination among the key governmental institutions across national and subnational levels, including:**
 - Clarifying the agency in charge of coordination across sectors, the mechanisms through which coordination occurs, and what issues are addressed and when.
 - Strengthening mechanisms for coordination across national and subnational governments, including ensuring funding mechanisms are in place to enable subnational action. For example, in Spain, lessons could be learned from the experience of effective government coordination throughout the COVID-19 pandemic.
 - Ensuring net zero targets are integrated into relevant national, subnational and sectoral policies.
- **Governments and legislators should firmly embed mechanisms for independent expert advice in governance systems, for example through:**
 - Establishing mechanisms for government to seek independent advice at the key stages of the policy process: setting intermediate targets; determining the policies to meet the targets; and reviewing progress.
 - In Spain, the independent expert advisory body, as envisaged in Spain's climate law, should be established and adequately resourced as soon as possible.
 - Outlining processes for government (or Parliament) to respond to the independent advice, including who is responsible for addressing the advice and the form of the response.
- **Governments should assess and reform the existing legal landscape for mobilising and delivering finance for the net zero transition, for example through:**
 - Streamlining permitting regulations for renewable energy projects and simplifying administrative procedures to access subsidies or other government support.
 - Ensuring that mechanisms to deliver international climate finance to national, subnational and local communities are transparent and efficient.
- **Governments should ensure that net zero targets and underlying policies are developed and implemented based on ongoing inclusive stakeholder engagement and public participation processes.** These may include:
 - Requiring stakeholder engagement and public participation in the key stages of a policy's development and implementation.
 - Defining the mechanisms through which stakeholder engagement and public participation will be implemented (e.g. establishing which entity is responsible for convening the process and how follow-up of outcomes will happen).
 - Convening citizens' assemblies and in areas particularly vulnerable to the impacts of the transition, focused stakeholder engagement and public participation around just transition.
 - Strengthening and improving transparency around the follow-up to stakeholder engagement and public participation processes.
- **Knowledge providers** should collect more evidence on the effectiveness of different designs of governance frameworks and processes in supporting net zero implementation in a variety of socioeconomic and political contexts.

1. Introduction

How do we achieve effective net zero governance and use it to drive greater political ambition in line with the Paris Agreement? This report explores why countries make net zero commitments and how they can advance from political promise to integrating and implementing the commitment through their national governance systems.

Meeting the Paris Agreement goal of limiting average global temperature rise to 1.5°C requires deep transformation of the world's economies. There is international scientific consensus, as conveyed through the Intergovernmental Panel on Climate Change (IPCC), that this target requires reaching net zero carbon dioxide (CO₂) emissions globally around 2050, alongside strong, deep reductions in other greenhouse gases (IPCC, 2018). Countries setting ambitious emission reduction targets in Nationally Determined Contributions (NDCs) is a critical step in this direction. Such targets subsequently need to be supported by national climate governance systems to ensure that they are implemented.

The Paris Agreement does not prescribe how countries should define net zero, nor how individual countries should contribute to reaching the global net zero objective. In practice this means that not all countries need to reach net zero at the same time. Developed countries are expected to continue taking the lead on emission reduction targets. The United Nations Secretary-General's Acceleration Agenda calls for developed countries to bring forward net zero deadlines as close as possible to 2040, and for emerging economies to aim for 2050.

Unfortunately, the evidence to date suggests inadequate ambition and credibility in NDCs and their implementation. The UNFCCC synthesis report on the first global stocktake, which assesses progress towards meeting global climate targets, reiterates that there is a shortfall in both ambition and implementation (UNFCCC, 2023). Implementation of current national pledges points towards an average global temperature rise of 2.4–2.6°C by the end of the century (UNEP, 2022). While more than 70 countries have net zero targets, either in law or in policy documents, many are not sufficiently credible (Net Zero Tracker, 2023; Hale et al., 2022). Recent analysis on the net zero targets of 35 countries scored 90% of them poorly in terms of the target being legally binding, whether there is a credible implementation plan, and whether a country's short-term policies place emissions on a downward path in the next decade (Rogelj et al., 2023). Many different interpretations of what net zero means have also emerged in the policy, academic and public debates (Fankhauser et al., 2022), which further clouds the issue of credible delivery.

Objectives and approach of this report

The aim of this report is to deepen understanding of the drivers behind the adoption of net zero commitments and how these commitments are being embedded into national climate governance systems. This reflects the need to bridge knowledge gaps and bolster the current level of systematic assessment in this area (Box 1.1 outlines the state of the literature to date). We create a framework for understanding the governance pathways that can lead to effective implementation of net zero commitments. The framework also enables us to identify opportunities and challenges associated with strengthening the credibility of commitments in different political and socioeconomic contexts.

We adopt a broad approach to defining 'net zero commitments', as our objective is to understand **governance factors** that enable a country to commit to climate policy aligned with the Paris Agreement. Our analysis therefore includes national laws that contain a 'net zero', 'climate neutral' or 'greenhouse gas neutral' target. However, there are important technical distinctions inherent to these terms. Depending on how they are defined by countries in specific policy and legal documents, these terms can suggest different approaches for how emission

sources, sinks and removals are accounted for (Oxford Net Zero, 2023). See Box 1.1 for literature on the technical standards net zero targets should meet.

Based on a combination of desk review and semi-structured expert interviews with climate policy practitioners, we apply the framework on governance pathways to two country case studies: Fiji and Spain. We then assess how their net zero commitments are being integrated across the nine governance functions identified by Sridhar et al. (2022). The choice of countries follows the ‘most different systems design’ approach to test the applicability of our framework across a broad spectrum of contexts. Fiji and Spain are different in many ways, such as their socioeconomic profile, emissions profile and vulnerability to climate change, but both have integrated net zero targets into their national legislation and are in the process of implementation.

These two case studies enable us to understand drivers and challenges at all three stages of a net zero governance pathway: i) political promise, ii) integration into the national legal framework, and iii) implementation across the national governance system. They also enable the comparison of governance pathways and challenges in a developing and a developed country.

More detail on our methodology is provided in Appendix 1.

Box 1.1. The existing literature on net zero commitments

Significant policy attention is being focused on net zero targets and the body of literature on this subject is growing rapidly. The proliferation of net zero commitments has been studied from multiple angles, including systematic assessment of:

- The robustness of countries, regions, cities and companies’ targets (Hale et al., 2022; Net Zero Tracker, 2023; Jeudy-Hugo et al., 2021)
- The diffusion of net zero as a norm (Van Coppenolle et al., 2023)
- The standards net zero targets should meet (Levin et al., 2020; Fankhauser et al., 2022; Rogelj et al., 2021)
- Achieving net zero in the private sector (UN High-Level Expert Group, 2023; Race to Zero campaign; Science Based Targets Initiative).

Several institutions also maintain public databases that track the changing landscape of net zero targets (e.g. Net Zero Tracker; Climate Change Laws of the World; Climate Action Tracker).

However, literature analysing the governance of net zero target implementation is currently limited (Loveday et al., 2022). Notable exceptions include:

- Research categorising litigation, judicial and regulatory mechanisms around net zero (Merner et al., 2023; Maxwell et al., 2022)
- The relationship between country governance indices, income inequality and net zero pledges (Flagg, 2015)
- Pathways to corporate climate commitments (Erb et al., 2022; Sarra, 2020)
- Polycentric governance approaches to carbon neutrality (Tan et al., 2022)
- Success factors for net zero adoption in the automobile industry (Virmani et al., 2022)

While not solely focused on net zero targets, Hilson (2020) provides a valuable taxonomy and normative framework to assess climate targets. There is also a small selection of case studies that examine the political process of net zero target-setting in individual countries (e.g. Joo et al., 2023 on South Korea, Bailey et al., 2021 on New Zealand, and Flagg, 2018 on Costa Rica).

Introducing our case studies

Fiji and Spain have both advanced on their governance pathways and are currently implementing their net zero laws.

Pathways to net zero commitment in Fiji

Political commitment: Fiji submitted its first National Communication (NC1) to the UNFCCC on 18 May 2006. In line with findings from our interviews (see Section 2.4), NC1 stated that, apart from mitigation measures being an obligation under the UNFCCC, such measures “will enable the country to participate in technology-transfer opportunities” (p. iv). This refers to the flow of know-how and resources around technologies that support national action on climate change, particularly to developing countries.

Fiji established its National Climate Change Committee in 1998. Fiji is an early-mover in climate change policy (see ‘international peer pressure and leadership’ driver discussion in Section 2). It published its National Climate Change Policy 2012–2017 on 17 February 2012, which updated the National Climate Change Policy Framework adopted by Fiji’s Cabinet in December 2007. Eight key objectives were set out in the policy: mainstreaming; data collection, storage and sharing; awareness raising; education and training; adaptation; mitigation; financing; and international and Pacific region participation.

On 22 April 2016, Fiji submitted its first Nationally Determined Contribution (NDC). This enshrined a mitigation target of reducing CO₂ emissions by 30% from a business-as-usual baseline scenario by 2030, and the goal of reaching 100% renewable energy power generation by 2030. However, it emphasised that 20% of these pledged emission reductions are conditional on obtaining external funding amounting to US\$500 million. This conditionality was strongly emphasised by multiple interviewees during our interviews. On 30 October 2017, the government published a NDC Implementation Roadmap 2017–2030, setting out details on how Fiji intends to meet its NDC targets.

In November 2017, Fiji’s Ministry of Economy published its 5-year and 20-year National Development Plan, in which it noted that “Fiji’s goal is to achieve net zero global greenhouse gas emissions by 2050, which reflects the long-term goal of the Paris Agreement to achieve climate neutrality and a low-emission world in the second half of the century” (p.8). Following this, Fiji published its Low Emission Development Strategy (LEDS) 2018–2050 on 3 December 2018. An updated National Climate Change Policy was published on 7 January 2019. Both documents confirm Fiji’s commitment to achieve economy-wide net zero carbon emissions by 2050.

Other key policy documents include its National Adaptation Plan and the Planned Relocation Guidelines, both published on 28 November 2018; the National Ocean Policy, published on 12 February 2021; the National Climate Finance Strategy, published on 21 June 2022, and the NDC Investment Plan, published on 20 December 2022. Each contains a pipeline of priority projects that should help shift support from technical assistance to project implementation.

Legal commitment: Fiji’s most recent NDC, submitted on 31 December 2020, reiterated its commitment to net zero by 2050 and stated its intention to enact a climate framework law. This was followed by an updated NDC Implementation Roadmap on 13 April 2021. On 23 September 2021, Fiji upheld its commitment and Parliament approved and enacted the Climate Change Bill, including a legally binding commitment to reach net zero by 2050. On 24 September 2021, the Climate Change Act was published in the state gazette. As stated on the [Laws of Fiji website](#) maintained by the Office of the Attorney-General, the Climate Change Act has not commenced yet.

Pathways to net zero commitment in Spain

Political commitment: Spain's commitment to climate neutrality is intrinsically linked to the EU's targets and policy and legislative frameworks (see 'supranational legal requirements' driver discussion in Section 2). The EU submitted its first NDC on 12 January 2017, on behalf of member states. This NDC set the EU's initial target of a 40% domestic reduction in greenhouse gas emissions by 2030, compared with 1990.

In December 2019, the European Council endorsed the EU's objective of achieving climate neutrality by 2050. In January 2020, Spain published its integrated National Energy and Climate Plan 2021–2030 (NECP), which stated that the "long-term goal that guided the preparation of the Plan is to make Spain carbon neutral by 2050" (p. 11). In March 2020, the European Council also submitted its long-term low emissions development strategy (LEDS) on behalf of the EU and member states. This confirmed the EU's climate neutrality objective. Spain's own long-term decarbonisation strategy, which included a 2050 net zero target, was subsequently submitted to the UNFCCC on 10 December 2020. On 18 December 2020, the EU submitted its updated NDC on behalf of member states. This NDC increased the EU's 2030 emission reduction target from 40% to 55% compared with 1990. The NDC also reaffirmed the Union's commitment to climate neutrality by 2050.

Legal commitment: Discussions around Spain's climate framework law began early in 2011 (Averchenkova and Lázaro-Touza, 2020). Friends of the Earth and Coalición Clima (now known as Alianza por el Clima) campaigned for adoption of a framework law. The Congress/Senate Commission on Climate Change later similarly recommended adoption of a climate change law. In 2015 at COP21, former Prime Minister Mariano Rajoy pledged to propose a climate change and energy transition law (La Moncloa, 2015). In 2017, the conservative government, Partido Popular (PP), began preparing a draft text, but the party lost office in June 2018, delaying adoption (Averchenkova and Lázaro-Touza, 2020). Nevertheless, the PP still presented its proposed text a few days after. In February 2019, a bill commissioned by Teresa Ribera, the Minister for the Ecological Transition, under the socialist government Partido Socialista Obrero Español (PSOE), was presented and subject to public consultation. In July 2019, the far-left party, Unidas Podemos (UP), also submitted a proposed text.

On 19 May 2020, the draft bill was finally approved by the Council of Ministers, incorporating key elements from the NECP 2021–2030 and enshrining a legal commitment to climate neutrality by 2050 (CMS Albiñana and Suárez de Lezo, 2021). The bill was approved by Parliament on 13 May 2021 and was made public in the state gazette on 21 May. The Law 7/2021 on Climate Change and Energy Transition came into force on 22 May 2021.

Structure of the report

A new framework to analyse governance pathways to net zero commitments is presented in Section 2, focusing on a set of drivers, plus key actors and strategies. We provide examples of how these drivers have led to net zero commitments in various countries, based on a broad literature review and our more detailed case studies of Fiji and Spain. We also highlight barriers to the setting of net zero commitments and their implementation.

Section 3 presents a typology of the different forms of political commitments to net zero. Section 4 then introduces the core climate governance functions required to make progress on net zero and assesses linkages to these functions across 26 net zero laws.¹

Section 5 presents our Fiji and Spain case studies in more detail, with an assessment of the integration of net zero commitments within the national governance systems in those two countries, including opportunities for strengthening the credibility and challenges associated with implementing commitments. Section 6 concludes and sets out recommendations for advancing countries along governance pathways from political net zero commitments through to their implementation.

2. Drivers for net zero commitments

All countries face their own unique national circumstances and are driven by different priorities and factors when considering the feasibility of net zero targets. A government makes political then legal commitments, and then takes steps to implement them.

This section describes the key drivers that move governments along a governance pathway to net zero. The presence of drivers does not automatically lead to ambitious net zero commitments and credible implementation. Much depends on how actors at different levels of governance (national and local governments, political leaders, civil society, business) engage with these drivers and what strategies they use. These actors and strategies are presented in a broader framework below (Figure 2.1), which shows the interplay between these three sets of factors.

The framework can be applied to a range of countries that have already committed to net zero to generate more comprehensive empirical insights on what strategies are being used, and by which actors, to reach and implement such commitment. It can also be applied to countries that have not yet taken a net zero commitment, in order to identify potential factors that could help advance a country on the pathway towards net zero.

Figure 2.1. A framework for analysing governance pathways to net zero



Drivers

International peer pressure and leadership

Countries may feel pressured or inspired to adopt net zero targets to demonstrate alignment with, or leadership in, global climate policy. The Paris Agreement itself is premised on the assumption that international political pressure will lead countries to ratchet up their NDCs (Lin, 2022), which should in theory lead to greater ambition towards net zero. This pressure may also derive from relationships with trade partners or 'rival' countries. For example, analysis by Joo et al. (2023) revealed that South Korea's political agenda on the climate was influenced by its strategic and economic partners like the US, as well as its rivalry with nearby countries, Japan and China: a "window of opportunity opened up when other countries started to adopt net zero targets in 2020" (Joo et al., 2023, p.6). A public sector interviewee in our study confirmed a similar sentiment for Spain, noting that the government wanted to set ambitious emission targets in domestic planning documents so that they could be "leaders in Europe". Multiple interviewees from Fiji highlighted that the country's commitment to net zero is partly driven by its role as a leader in the Pacific region, and noted that ongoing regional meetings help to increase motivation to act among Pacific island states.

Pressure to demonstrate leadership in global arenas is heightened when countries hold the Presidency of the COP (Conference of the Parties to the UN Framework Convention of Climate Change). Some countries, such as Japan, passed major climate change legislation shortly after hosting a meeting of the COP (Clare et al., 2017). In his opening speech at COP25, Sebastián Piñera, former President of Chile, stated that "the ever-increasing urgency of our objectives requires that we be more ambitious and demand more of ourselves" (Prensa Presidencia, 2019). The increased attention around hosting the COP and the domestic ambition expressed by the Presidency reportedly contributed to the decision to develop a Chilean climate change law (Madariaga Gómez de Cuenca, 2021), which legislated a net zero target in 2022. This interaction with COPs was highlighted strongly by both interviewees² from Spain and Fiji as a significant part of the 'international peer pressure and leadership' driver.

"When Madrid stepped in to help Chile host the COP, politically this was another important moment in time where the pressure was on the Spanish government to show leadership... it was one of the main things that allowed Spain to adopt a net zero target quickly, and then to work backwards into what that meant." (Private sector interviewee, Spain)

Prominent politicians play a crucial role in pushing for ambition. In Mexico, Felipe Calderón's intention to make climate change his public policy legacy was a key driver to the country's adoption of its climate law in 2012 (although it does not contain a net zero target) (Averchenkova and Guzman Luna, 2018). Teresa Ribera's leadership was also emphasised by multiple interviewees in Spain. A public sector interviewee from Fiji stressed the former Prime Minister Frank Bainimarama's role as a climate champion in the international arena. In December 2020, he was awarded that year's Champion of the Earth Award (UNEP, 2020).

In Fiji, several interviewees explained that committing to net zero is one channel through which Fiji can pressure others, in particular developed countries, to be more ambitious in their climate mitigation targets. As a vulnerable developing country making such an ambitious commitment, Fiji can speak with strong and clear moral authority in international fora like the COP against those lagging behind.

"Our vulnerability is one of the reasons that governments are taking action... Some use the analogy of us being the canary in the coal mine... but I also think we can be an example to the rest of the world... Yes, we have development challenges... but if we prioritise and invest

² Please note that all interviews were conducted in English.

in green, clean, renewable energy, over the long term it's going to have multiple benefits... We can then speak with greater moral authority.” (NGO interviewee, Fiji)

“We are trying to do everything we can to show Fiji as a frontliner on climate change. We should be focusing more on adaptation and loss and damage, but it doesn't mean we are not doing our part to reduce our greenhouse gas impact, despite this being negligible. We are trying to lead the way and are pushing developed countries to commit with us.” (Public sector interviewee, Fiji)

Supranational legal requirements

The obligations of countries under the Paris Agreement also play a role in enabling national net zero targets. The Paris Agreement, specifically Article 4, “marked the start of the institutionalisation of net zero” (Van Coppenolle et al., 2023, p.54). The 2018 IPCC special report on the impacts of global warming of 1.5 °C was commissioned as a direct result of the Paris Agreement. Van Coppenelle et al. (2023) argue that after the 2015 Paris COP, net zero escalated from an idea to a global norm. For example, the Carbon Neutrality Coalition, consisting of 19 countries, was founded in September 2017. In December 2018, the European Commission announced its 2050 target, and in June 2019, the UK enacted the *Climate Change Act 2008 (2050 Target Amendment) Order 2019*, becoming the first G7 economy to enshrine its net zero target in law.

All parties to the Paris Agreement are also required to submit long-term strategies for greenhouse gas emission reductions, intended to push governments to act with greater foresight (Buylova et al., 2023). A non-governmental organisation (NGO) interviewee referred to Spain's net zero target as an “obligation” created by the Paris Agreement, even prior to any EU-level requirements. Two interviewees from Fiji named the Paris Agreement as a guide for domestic implementation and ambition.

“The fact that Fiji signed the UNFCCC was a big driver for monitoring, reporting and verification. But right now, it's the Paris Agreement and the enhanced transparency framework which are the big drivers. And they're definitely enablers, not barriers.” (International organisation interviewee, Fiji)

The EU regulatory framework, in particular the European Climate Law, is a major driver for members states to commit to net zero. The law requires all member states to take necessary measures to meet the EU's goal of net zero by 2050. Even prior to the law entering into force, the endorsement of the 2050 target demonstrated a clear political mandate at the European level. Multiple interviewees from Spain highlighted that this mandate helps to de-politicise climate-related policies in Spain. The dialogue that exists between Spanish ministers and their counterparts in Europe serves as a political channel to enable Spain to make long-term commitments.

“Spain is an extremely enthusiastic adopter of EU resolutions. So, from the moment that there was an EU decision for net zero... they already had a broad consensus in Spain.” (Research/think tank interviewee, Spain)

In addition to identifying the EU as a major influence on countries to commit to net zero targets at the national level, interviewees from Spain emphasised that implementation can also be enabled by policies at the EU level. For member states that do not currently have national climate framework laws, the EU Governance Regulation still requires them to prepare National Energy and Climate Plans and national long-term decarbonisation strategies (in line with Paris Agreement obligations). Despite considerable variation across the content of National Energy and Climate Plans (NECPs) (Maris and Flouros, 2021), the requirement to plan 10-year strategies encourages both long-term and interim target-setting. Although not strictly a climate policy, the

EU Recovery and Resilience Facility was also cited by multiple interviewees from Spain as a driver for net zero implementation, as it enables increased investment in the energy transition.

However, the influence of EU-level decisions varies depending on the socioeconomic and political context of member states. The dynamic between European and national climate policy can be a barrier as well as a driver. For example, a dispute over Poland's Turów coal mine has been cited as a "source of political pride" for the Poland's government and the situation turned into a "sideshow to a wider feud between Brussels and Warsaw over sovereignty, money and rule of law" (reported by Minder and Erling, 2023); Poland had resisted the European Court of Justice's 2021 interim order to stop mining, put in place to prevent irreversible environmental damage, and refused to pay the daily fines imposed (Minder and Erling, 2023).

Historical context and political culture

Historical context and political culture influence a country's pathway to committing to net zero. For example, Flagg (2018) found that Costa Rica's original net zero target set in 2021 was "chosen for its cultural and political importance" (p.10), 2021 also being the year as the country's bicentennial celebration of independence. The country's experience as a Spanish colony and newly independent nation, as well as key events like its former President being awarded the Nobel Peace Prize (Óscar Arias Sánchez in 1987), were foundational in forming a political tradition of leading by example (Flagg, 2018). Similarly to Costa Rica, in Turkey's announcement of its goal to reach net zero by 2053, the deputy environment minister noted that that year was chosen to mark the 130th anniversary of the Turkish Republic (Lo and Farand, 2021).

Interviewees from Spain highlighted the importance of its political culture of strong public engagement and pressure, which exerts an expectation for the government to be accountable for delivery once the net zero target has been set.

"Because Spain is a relatively young democracy..., people understand that governments are supposed to act." (Private sector interviewee, Spain)

"The Spanish citizens, when you give them the space for engagement. They really, take it seriously... if you give the space for citizens, they really respond in Spain." (Government advisor interviewee, Spain)

In Fiji, there is a political culture of "always trying to look for firsts" (Government advisor interviewee). The country acted quickly to ratify the Paris Agreement, was the first in the Pacific to enshrine net zero as a legal commitment and is part of a 'Fossil Fuel Free Pacific' coalition of six Pacific Island nation governments. Putting pressure on peers and demonstrating leadership, as discussed above, was cited by interviewees as a political tradition in Fiji.

However, historical context and political culture may also create implementation challenges for net zero. Multiple interviewees from Spain highlighted the challenges created by the complicated relationship between autonomous communities and the national government. Spain has 17 autonomous communities, which, in accordance with the country's 1978 Constitution, adopt their own statutes and hold legislative powers and various competencies. When considering Spain's governance pathway to net zero, it is therefore crucial to understand the dynamics between the regions and national institutions, and the different responses depending on the specific regional context. A private sector interviewee noted that there is a level of political standoff as the regions feel that by agreeing to certain requests from national authorities, for example on permissions for solar farms, they may be conceding certain administrative and political powers.

Economic opportunities

To gain political and public support for net zero policies it is a prerequisite that the economic benefits are identified and communicated as part of the core narrative around net zero. This rests on the ability to formulate and articulate a credible and appealing narrative around the various

economic opportunities of the transition. A prominent discourse on these benefits of net zero centres around the economic opportunities (e.g. UK Independent Review of Net Zero, 2023). The desire to promote domestic industries, employment and energy security may be strong drivers for making and implementing net zero commitments (Lin, 2022), as well as the aspiration to develop greener and more accessible cities. There is a link between this driver and the pressure to demonstrate leadership, as first-movers have the potential to develop capabilities that result in long-term competitive advantage (Lin, 2022). For example, China, produces at least 80% of the world's solar panels and 60% of wind turbines and electric vehicle batteries. The country's low-carbon technology companies are reported to "pose a massive competitive threat to western manufacturing industries" (White, 2023).

A clear narrative around economic opportunities emerged as one of the strongest drivers for Spain's net zero commitment and transition in the interviews conducted. The recognition of great potential for renewable energy generation in Spain, coupled with an ambition to gain a stronger position in the European energy market, provides a strong argument in favour of the net zero transition. Multiple interviewees emphasised that energy companies and the electric vehicle industry have clearly aligned themselves with the country's net zero target. Renewable energy is an internationally competitive sector for Spain, and many renewable energy companies and business associations (interviewees cited the Spanish Green Growth Group specifically) are lobbying the government for more progressive climate policy to enable Spain to become a cheap supplier of electricity to Europe.

"A lot of firms are supporting net zero objectives because now it's not [only] a question of responsibility, but it's also a question of opportunity." (Private sector interviewee, Spain)

Economic opportunity has also emerged as an important consideration in Fiji's decision to move towards net zero. However, a bigger focus in Fiji, according to our interviewees, is how net zero objectives can help to improve energy security and access to international climate finance. Fiji receives most of its supply of fossil fuels from Singapore, which carries high costs. Therefore, there is an economic incentive to become more self-sufficient in energy generation, which also has the benefit of improving climate resilience, as the following quote demonstrates:

"If we had renewable energy and decentralised renewable energy systems, we would actually be more resilient to disaster events. At the moment, one break in the grid is like a set of Christmas tree lights, where you take out one light and they all go out."
(Government advisor interviewee, Fiji)

This argument can also shape enabling narratives to convince various stakeholders of the benefits of the net zero transition at the micro level. For example, addressing the reliance of the transport and electricity sectors in Fiji on high-cost diesel imports could help gain the support of those operating in these sectors. This shift to renewables would not only reduce costs, but also enhance the security of supply (Government advisor interviewee, Fiji). At the macro level, a net zero commitment may result in economic opportunities through a country's eligibility to participate in global discussions on emerging technologies, and catalyse technology-transfer and climate finance for renewable energy projects from both public and private sources.

"Having a net zero target is critical in maintaining Fiji's leadership...but also not to be left behind when it comes to the technological transition." (Government advisor interviewee, Fiji)

Access to international climate finance in Fiji

An economic benefit that has been less explored in the net zero literature to date is the potential for improved access to international climate finance for developing countries that commit to net zero targets. Where the domestic legal and regulatory framework is unclear, a country is less likely to attract international climate finance to implement its NDC (UNDP, 2013). Creating a robust and consistent regulatory framework helps support the flow of international climate finance to subsequently enable the development of other laws and policies (Nachmany et al., 2017). This was underscored strongly by Fiji interviewees, several of whom noted that the need to access finance was among Fiji's key drivers to commit to net zero in law. There is an expectation that having a clear long-term objective embedded in the national legal framework sends a strong signal to international donors, whose support plays a significant role in enabling Fiji to set its climate policy. According to Morita and Pak (2018), the Government of Fiji had acknowledged the role of clear legal and governance structures in attracting more finance and prior to enacting the current Climate Change Act had undertaken an assessment of its legal framework and institutional arrangements to identify potential areas of reform.

The ability to attract increased climate finance is closely connected to the 'climate vulnerability' driver described below, as although the net zero target is clearly a climate mitigation objective, some interviewees suggested that it opened the door to funding streams that could also be channelled towards adaptation needs. A stable regulatory environment provides donors with the increased security they seek when facilitating financial flows into developing countries (Nachmany et al., 2017).

"Having a clear framework to monitor [progress] against and a pipeline of projects aligned to national targets is helpful in mobilising finance – for example, the Climate Change Act and a robust NDC financing and implementation plan, including bankable projects... These key policy documents can be used to proactively approach donors and clearly [demonstrate] country needs in line with national circumstances: this provides a strong and quantifiable case of funding." (Government advisor interviewee, Fiji)

Some interviewees also emphasised the direct influence of international climate finance as an enabling factor for net zero commitments and their subsequent implementation.

"[The donor] does have influence, because these [climate] policy documents and legislation will never be drafted from the government budgetary fund. There are no funds there to work on this." (Research/think tank interviewee, Fiji)

However, once a commitment is in place, access to finance can also pose a major barrier to implementation as financial constraints may also raise tensions between mitigation and adaptation goals. In Fiji's case, interviewees emphasised the vulnerability of the country as a small island developing state, and some highlighted the risk that Fiji's emission reduction targets may shift attention or funding away from urgent action to adapt to climate risks (e.g. research/think tank interviewee and public sector interviewee).

Domestic social pressure

For countries that have yet to commit to net zero, civil society actors play an important role in placing social pressure on governments to make political commitments and integrate net zero targets into the governance system. Campaigning, litigation, public opinion surveys and engagement with politicians are all strategies being used to exert such pressure. One example is the work of a youth-based NGO, Generation Zero, in the lead-up to New Zealand's 2019 Zero Carbon Act. The group's campaign involved multiple strategies, including providing a blueprint

adapted from parts of the UK's Climate Change Act of 2008, engaging business actors and parliamentary representatives, and seeking advice from academics. The group were seen to be "one of the main entrepreneurial drivers creating agendas for a new legal framework" (Bailey et al., 2021, p.1164). In Ireland, the Stop Climate Chaos coalition of NGOs ran a targeted lobbying campaign focused on setting climate mitigation targets and plans, establishing an independent advisory body, and promoting climate justice principles. They also published a report comparing Ireland's draft law with other European experiences (Torney, 2017). Campaigning may amplify pressure created around COPs. When it was announced that COP25 would take place in Chile, for example, there was an "atmosphere of large local attention and involvement in the climate crisis" (Madariaga Gómez de Cuenca, 2021).

Public opinion surveys may be used to call attention to the social consensus around climate change. For example, in late 2020, prior to President Moon's net zero pledge in South Korea, opinion polls in the country showed that 93% of the public supported going carbon neutral (Oh et al., 2021). In Spain, a 2019 survey on citizens and climate change found that the vast majority of the public believe that Spain should have a climate change law, and there was a high level of support for a net zero target and an independent scientific committee that proposes climate goals (Elcano Royal Institute, 2019). The impact of public opinion surveys as an enabling strategy can be accentuated by media coverage. An NGO interviewee from Spain succinctly summarised that the media's use of statistics and survey data in turn encourages buy-in from politicians: "*The media kept on reporting for a couple of years later [on survey data] ... for better or for worse, it's something that politicians pay attention to.*"

Social pressure for the net zero transition can also be exerted by politically active stakeholders in the private sector, for example by prominent business associations. Several interviewees noted the important role that business associations and individual companies have played and are currently playing in advancing the net zero debate in Spain. These actors exert pressure directly on the government and other stakeholders, including on business sectors opposing the net zero transition such as oil industry groups, and the automotive industry. An important strategy in this respect is forming coalitions between business actors, civil society and other voices supporting net zero objectives. In Spain, multiple interviewees cited the enabling influence of the Spanish Green Growth Group.

"[Business associations] organised many meetings in Madrid where they had discussions with people that decarbonisation was an opportunity for Spain from an economic point of view and tried to block what some oil companies were saying about the risk to competitiveness of our country. They defended the opposite... that Spain can become a supplier of cheap electricity for other European Union members and the idea that with the cheaper electricity based on renewables, we can attract industries to Spain. So, they had this discourse that actually is aligned with the policy of the government. I think that was helpful." (Research/think tank interviewee, Spain)

"It is not just talking directly to the government, but also having these informal alliances with environmental NGOs, social NGOs and universities, going together to the government and to the other political parties. I think this played a role in this growing social and political support to the net zero agenda." (Private sector interviewee, Spain)

In recent years, courts have increasingly been used as a channel to exert social pressure for ambitious emission targets and accountability for their implementation once set. Civil society may bring legal claims seeking to enforce targets, challenge the adequacy of targets or plans for achieving them (e.g. questioning the reliance on carbon removal technologies), and tackle misleading communication around targets (Merner et al., 2023). For example, in the case of *Neubauer et al., v Germany*, a group of young people successfully argued that Germany's target of reducing emissions by 55% by 2030 placed an unreasonable burden on future generations. The Court ordered the government to reconsider the targets and also clarify targets from 2031

onwards. Just weeks after the judgment was issued, the government approved proposals to raise the target to 65% by 2030, and went beyond the court judgment to set a target of net zero by 2045. In both the UK Net Zero Challenge and *Plan B Earth and Others v. Prime Minister*, civil society groups have challenged the adequacy and inconsistency respectively of the UK government's plans to meet its legislated net zero target.

Just transition

While a net zero transition can bring economic opportunities, the pathway to decarbonisation may also have negative impacts on vulnerable communities. If the transition is not managed equitably, opposition from those who may lose out can be a barrier to progress on net zero. For example, in Spain, conflicts between urban and rural citizens around the deployment of renewable energy infrastructure have created tensions that, alongside administrative barriers, have contributed to stalling progress on renewables projects (Government advisor interviewee). The pressure builds as governments struggle to communicate progress to the broader public.

“One of the biggest challenges is for the citizens to visualise the progress. [The government] not being capable to show [what is being done] in a way that the citizens can understand... I think it is a pity because this will play against them during the elections.” (Government advisor interviewee, Spain)

The term 'just transition' encompasses the importance of minimising negative impacts from climate policies and maximising positive social impacts for broader stakeholders and communities (Robins and Rydge, 2019). It means “greening the economy in a way that is as fair and inclusive as possible to everyone concerned, creating decent work opportunities and leaving no one behind” (ILO, 2015). Ensuring that just transition principles are firmly part of net zero policies and narratives can be a key factor in whether social pressure from various segments of society acts either as a driver or a barrier to the net zero transition. Policies that consider distributional impacts minimise the risk of political backlash (Robins, 2022) and can enable credible implementation, as they are more likely to gather broader public and political support for the transition.

The importance of just transition framing as a strategy to enable support for net zero in vulnerable regions comes through strongly in our Spain case study. In 2019, the Spanish government launched a Just Transition Strategy with an urgent action plan to address the impacts experienced in coal-producing regions by the shutdown of power plants (ITJ, 2022). It draws on a 2018 Framework Agreement for a Just Transition for Coal Mining and the Sustainable Development of Mining Regions for 2019–2027, signed by the government, trade unions and mining companies, and guaranteeing support for mine workers and mining areas. In 2020, the Just Transition Institute was created and work began on 'just transition agreements' to guarantee coordination and to propose support instruments to facilitate the reactivation of affected areas. Spain also allocated €301 million to the just transition in its National Recovery and Resilience Plan (Lázaro Touza et al., 2022; ITJ, 2023).

Several interviewees highlighted that framing the debate on net zero commitment in the context of a just transition in Spain has helped to overcome opposition from some economic sectors (e.g. from the automotive industry and energy companies). Some interviewees were particularly positive about the Ministry of Ecological Transition's framing of the just transition in policies to phase out coal mining and acknowledged the importance of direct engagement between the Ministries and the affected communities, which helped to build trust.

“We were among the first countries to present our plans with a change in the narrative from cost to win-win. So, not highlighting the cost of transition but rather highlighting the benefits of the long-term.” (Government advisor interviewee, Spain)

“We shouldn't need just transition plans for the sake that it reduces polarisation. We should have just transition plans for the sake of having that transition at all.” (NGO interviewee, Spain)

Our interview findings are supported by a recent empirical study that showed that the Spanish Socialist Party government's vote share in coal mining municipalities increased in the 2019 election (Bolet et al., 2023). This followed their negotiating a just transition agreement on phasing out mining with unions and businesses, shortly prior to the election.

Civil society organisations can be instrumental in shaping the framing of a just transition as part of the net zero discourse. An NGO interviewee suggested that net zero must equate to a *“just and equitable transition”*. Such narrative needs to show the public why a net zero transition is beneficial to them – i.e. to upskill and create jobs. Practical strategies cited by two NGO interviewees in Fiji included: coordinated campaigns to build awareness; using social media to communicate easily-digestible information to a broader public; and designing youth programmes to familiarise wider communities with vocabulary frequently used in climate policies (e.g. mitigation, abatement costs, decarbonisation). An NGO interviewee from Fiji said that they *“take whatever we learn... to our colleagues, friends and families that are out of the city”*.

Political party competition

Competition between political parties influences climate policies (see e.g. Farstad, 2018; Ladrech and Little, 2019), but whether or not this influence works in favour of the net zero transition depends heavily on the social and political context. Party politics and stances play a key role in influencing net zero commitments and the extent to which parties respond to social pressure. Party stances on the climate are influenced by a range of factors, including public opinion, interest group demands, ideology and the nature of the political system (Carter and Little, 2021). It may even be the case that factions within the same party respond differently to social pressure. For example, an NGO interviewee in Spain noted:

“The Conservative party in Spain is double-headed. It's like it has one soul which is much more progressive in terms of climate action, and another soul that is less progressive and less prone to listening to social pressure.” (NGO interviewee, Spain)

Competition can make political parties amplify their climate ambitions to attract votes. For example, in Denmark's 2019 primary election, political parties competed to outbid each other's climate change targets, resulting in strong political support for the Danish Climate Act (Averchenkova et al., 2022). Deliberation among political parties during the negotiation of a climate law can create support for and commitment to its objectives, locking in political consensus (Lockwood, 2013), as was seen with the UK's Climate Change Act. A study of the Climate Acts of Scotland, Austria, Denmark and Sweden found that governments are more inclined to adopt strong climate laws where there is a high level of deliberation in parliament (Nash and Steurer, 2021). In New Zealand, cross-party consensus on the importance of climate change among the major political parties and a concerted effort to involve the representatives of political parties in drafting the legislation was a key enabler for the adoption the Zero Carbon Act in 2019 (Bailey et al., 2021).

In some circumstances, party competition may impede policy decisions or lead to ineffective compromises (Ladrech and Little, 2019). This is often the case in politically polarised societies and those dominated by interest groups opposed to climate change policies. A lack of political consensus on net zero objectives among the main parties may jeopardise political commitment and can lead to policy reversal during changes in leadership (Averchenkova et al., 2022).

Political polarisation, and divergent views on net zero represented by different political parties, emerged as a potential risk and barrier to meeting net zero targets in our Spanish case study. If

campaign groups acknowledge such polarisation and develop just transition narratives, this can help to depoliticise climate policies. A government advisor interviewee in Spain also emphasised the need to get energy lobbies on board with net zero policies.

“One of the barriers we have at the moment is the political polarisation in the country: that is, the different views about the issue that are represented by the main political streams, which is the risk we have now... Populism and the extreme right are rising, and they are barriers to climate [action].” (Government advisor, Spain)

“We had three different proposals for the law and it took almost 11 years to adopt it. So I think avoiding polarisation and really making this a country strategy is what needs to happen.” (Private sector interviewee, Spain)

“Because of the political context in Spain being a highly polarised society, we’ve always tried to frame our work on topics that don’t polarise and either party can take and use...” (NGO interviewee, Spain)

In theory, the risk of backsliding for EU member states is partially mitigated by the legal obligations set under the European Climate Law and related legislation. However, the political reality may be different. In Spain, an NGO interviewee noted that the “push from above” varies depending on which party is in power. This is further complicated by Spain’s governance structure of autonomous communities: when different parties are in power in different regions, there can be misalignment between regional policy and national climate policy. Given that regional emissions aggregate to Spain’s overall emissions, the political dynamics in different regions is a key influencing factor in Spain’s net zero pathway.

Independent advisory bodies on climate change can make a key contribution to depoliticising the debate around net zero objectives and their implementation (explained further under the ‘science and knowledge’ driver below). For example, an analysis of the first decade of the parliamentary debates following the adoption of the UK’s Climate Change Act 2008, showed that the information and analysis produced by the Climate Change Committee (CCC) was widely cited by Parliamentarians across the political spectrum and frequently used as the technical basis for political arguments calling for greater ambition (Averchenkova et al., 2021b).

Climate vulnerability

A country’s level of vulnerability to the impacts of climate change also influences their pathway to net zero. Studies have shown that experience of extreme weather events and climate-related disasters (e.g. hurricanes or heat waves) influences public beliefs on the reality of climate change and its human causes (e.g. Sloggy et al, 2021; Spence et al., 2011). These experiences can lead to increased public attention (Lang and Ryder, 2016) and support for governmental action to reduce greenhouse gas emissions (Sloggy et al, 2021). In this way, vulnerability to the impacts of climate change makes climate change a more salient political issue, and can therefore encourage more ambitious climate commitments. For example, a recent survey found that Americans who reported experiencing climate distress were more likely than those who reported no distress to say they would join a campaign to convince elected officials to take action to reduce global warming, or are already participating in such a campaign (Ballew et al., 2023).

In Spain, the State Meteorological Agency, AEMET, shows that more than two-thirds of Spaniards (over 32 million people) are already suffering direct consequences of climate change (MITECO, 2020). The frequency and severity of extreme heatwaves, forest fires and floods in Spain has raised the salience of climate change as a public issue (Álvarez-García et al., 2023). According to most interviewees, this is acting as a trigger for growing social concern and supporting a broad societal consensus on the need to combat climate change and its impacts.

“It’s not something that we read in the newspapers. People are just experiencing that... it helps...the population now is going through personal experience of having very hot summers... [There is] social fear of the growing frequency and severity.” (Research/think tank interviewee, Spain)

In Fiji, vulnerability and the country’s negligible contribution to emissions also interacts with and strengthens the ‘international peer pressure and leadership’ driver. Interviewees felt that as a small island developing state that is highly vulnerable to climate change, Fiji’s decision to commit to net zero stands out in the international arena and can be used to further exert pressure on developed countries that are much less vulnerable yet contribute significantly to global emissions.

“We are trying to show the developed countries: we are the frontliners to climate change, but we are also committed to reducing greenhouse gases and are committed to achieving 1.5 degrees.” (Public sector interviewee, Fiji)

Science and knowledge

The concept of net zero emissions is grounded in physical science, concerning the balance of levels of carbon dioxide in the atmosphere and removals by sinks (Rogelj, 2023). A science-based approach was adopted into international climate policy primarily through the Intergovernmental Panel on Climate Change (IPCC), starting with the 2014 *Fifth Assessment Report* and strengthened in the 2018 *Special Report on Global Warming of 1.5 °C*. Global consensus on the state of knowledge presented in the IPCC process and reports facilitates the entry of net zero discourse into domestic political debates, which in turn encourages political commitment. According to a government advisor interviewee in Spain, *“the debate internally in the country started when the IPCC called for net zero by 2050 as a solution”*. The IPCC is also referenced several times in Spain’s national legislation on net zero (*Law 7/2021 on climate change and energy transition*).

Domestic political buy-in and commitment to net zero, and its subsequent translation into specific policies, requires data that is suited to the national context. The availability of credible and nationally-owned data and analysis can enable political commitment, while the lack thereof poses challenges and risks to the integration of net zero objectives into national governance and their subsequent implementation. In this context, national independent advisory bodies on climate change, or similar mechanisms for translating and generating country-specific knowledge, have increasing importance. For example, in 2018 the UK government invited the independent Climate Change Committee (the CCC) to advise on a net zero emissions target prior to taking the decision to amend the target set in the Climate Change Act of 2008 (Averchenkova et al., 2021a). Analysis of the impact of the CCC over the decade preceding the adoption of the UK’s net zero target showed that independent expert advisory bodies can serve as an impartial knowledge broker and enable more evidence-based and ambitious policymaking (ibid., 2021b).

Challenges remain in maintaining a rigorous science-based approach throughout the implementation of net zero targets. For example, the development of intermediate targets or sectoral targets may be complicated by a lack of emissions data. When a political statement is first made, it may be timed around windows of opportunity, for example to coincide with meetings of the COP, elections or with trade partners announcing net zero commitments, which may not necessarily enable the necessary preparation of in-depth analysis on feasibility pathways based on an accurate national emissions inventory. In both Fiji and Spain, interviewees highlighted that the political rush to adopt net zero targets and net zero laws resulted in political commitments often having been made before the country had full data, analysis on feasibility and scientific pathways for implementation of such commitment, or in-depth parliamentary deliberation.

In Spain, one interviewee highlighted that feasibility data for net zero was lacking prior to starting the process of writing the 2050 strategy:

“You cannot say that in 2050 something will come out from a space and solve the problem, so we have to believe we will be there [at net zero] in 2050. But in the end, you need people with time. The biggest challenge was meeting the deadline [for the long term strategy]... But no, until we started, we didn't know if it was going to be feasible.” (Public sector interviewee, Spain)

In Fiji, an interviewee with experience in parliamentary procedures similarly emphasised that the time given to review and pass the Climate Change Bill (with the net zero target) was very tight:

“Parliament was given a very short time to study [the bill] and prepare the MPs for the consultation and for the debates in Parliament. If it had gone through a longer consultation, the bill would have attracted more buy-in from all sectors of Fiji. Civil society organisations and academia could have added a lot of value to the Act.” (Interviewee observing parliamentary process, Fiji)

Interviewees suggested that civil society organisations and other relevant stakeholders could consider increasing efforts to build the capacity and knowledge of Parliamentarians to ensure government accountability for the provisions in the Climate Change Act in Fiji. At the time of interviews, Fiji had recently undergone a change in government administration, which involved structural changes that affected capacity from a resourcing perspective. While Fiji has enacted the Climate Change Act 2021 (which enshrines the net zero target and key governance functions associated with implementing it), it has not yet entered into force. The intention is to enforce sections once ministries are prepared to carry out their relevant duties under the Act.

“Once we have MRV [monitoring, reporting and verification] systems and a clear emissions inventory in place across all sectors, it will move towards [implementation].” (International organisation, Fiji)

In Fiji, interviewees emphasised that inventory data remains a challenge in the country's current implementation phase, hence there is currently a strong focus on developing the national MRV system – as well as local, context-specific knowledge. This is closely related to Fiji's relationships with international organisations and consultants. One interviewee mentioned that the emissions inventory was previously developed mostly by the climate change division and consultants, making the availability of accurate baseline information a practical challenge. Nonetheless, most interviewees emphasised that Fiji is at the beginning of its net zero implementation journey, and these challenges have been acknowledged and are starting to be addressed. There is a move towards more embedded capacity within ministries to reduce the number of external, temporary consultants. An international organisation interviewee and a government advisor interviewee both additionally highlighted that it is key to retain both the local experts currently present in Fiji and capacity for net zero implementation within the public sector.

Similarly, a research/think tank interviewee in Spain emphasised that local policy expertise and knowledge is key to enabling Spain's implementation of net zero. They noted that in the past *“there has been an over reliance on passively accepting what Brussels was telling [us] to do”*, creating some gaps in climate and environmental policy expertise tailored to Spain. NGOs are also instrumental in this process of developing science, knowledge and capacity to encourage commitments and credible implementation. A private sector interviewee emphasised that scientific organisations and NGOs *“do tend to have greater impact”* when coalition-building with government and other stakeholders, compared with traditional environmental NGOs in Spain.

Drivers: summary of findings from Fiji and Spain

Based on our semi-structured interviews, the most prominent drivers for Fiji and Spain in their political and legal pathway to net zero are: supranational legal requirements and economic opportunities in Spain, and international peer pressure and leadership in Fiji, followed by climate vulnerability and access to international climate finance.

However, despite significantly different country contexts, the case studies revealed shared drivers to net zero. The message of economic opportunity emerged strongly in both countries, albeit with nuanced differences. In Spain, the message was focused on the country's competitive advantage in renewable energy. By contrast, economic benefits in Fiji means energy security, resilience and finance for infrastructure. Interviewees also emphasised that the transition may help reduce energy costs for individuals (e.g. those driving vehicles for a living and the general public through energy bills).

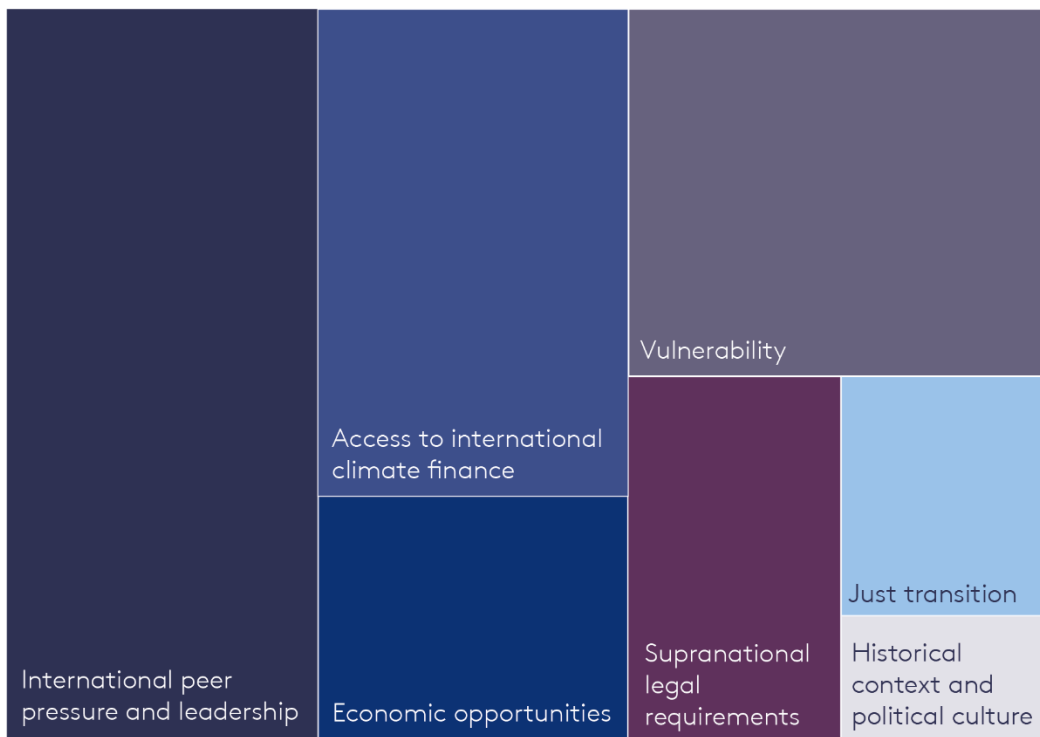
Domestic social pressure and the just transition also emerged as significant drivers in both countries' pathways from committing to net zero to its subsequent implementation. Interviewees from both countries emphasised the importance of NGOs in pushing governments to act, and highlighted the need for a transition that accounts for affected communities and incorporates inputs from a wide range of stakeholders. In Spain, business associations and renewable energy companies were identified as the key actors in exerting pressure on the government to implement transition policies faster. In Fiji, several interviewees viewed the private sector as the next frontier for the implementation of net zero – something that interviewees recognised can be enabled by the government's authority to establish a private sector advisory committee, as set out in the Climate Change Act.

In Spain, the influence of the EU's legal framework was recognised as a key driver. To a lesser degree, the obligations and reporting requirements under the Paris Agreement were seen to serve a similar purpose for Fiji. In both countries, historical context and political culture gained brief mentions but were not highlighted as strong drivers.

In terms of barriers to implementation, political polarisation or differences in political parties were referenced in both countries. In Spain, the emphasis was around the increasingly divergent views on net zero held by different parties. In Fiji, the barrier was less about party dynamics and more focused on the practical issue that the Climate Change Act (and net zero target) had been put in place and championed by the previous government and under the leadership of the previous Prime Minister. Interviewees reported that the Act is under review by the current government and, in the interim, there has been a pause (or at least a slowing down) of implementation to avoid efforts being wasted if parts of the Act are amended.

Figures 2.2a and b below show the relative importance of drivers to net zero in Fiji and Spain. Each rectangle is proportionate to the number of interviewees that mentioned a particular driver as being important for the political commitment to net zero.

Figure 2.2a. The relative importance of drivers to net zero in Fiji based on interviews



Note: These results are based on the responses from 11 interviewees in Fiji, representing perspectives from public sector, government advisors, legislators, NGOs, research and think tanks, and international organisations. See Appendix 1 for more details on our methodology.

Figure 2.2b. The relative importance of drivers to net zero in Spain based on interviews



Note: These results are based on the responses from 14 interviewees in Spain, representing perspectives from private sector, public sector, government advisors, NGOs and NGO funders, research and think tanks. See Appendix 1 for more details on our methodology.

3. Forms of political and legal commitment to net zero

There are different ways in which governments might announce their commitment to net zero. *Net Zero Tracker* categorises the status of a net zero target as: 'in law', 'in policy document', 'declaration/pledge' and 'proposed/in discussion'. Levin et al. (2020) identify additional policy settings for the net zero target, including cabinet decisions, nationally determined contributions (NDCs), collective intergovernmental commitments, or policy positions.

Political commitment

Based on the literature on net zero governance and a desk review of countries that have announced net zero commitments, we present in Table 3.1 a typology of forms of net zero political commitments, with examples.

Table 3.1. Forms of political commitment to net zero

Form of commitment	Description	Examples
Pledge by head of state	A country may announce its political commitment to net zero through a public pledge, declaration, or other media statement by a prominent political leader. This often coincides with the annual UN Conference of the Parties (COP) meeting.	Nigeria's President committed to achieving net zero CO ₂ emissions by 2060 at COP26 (Gupte, 2021). In his 2019 annual address, Chile's President announced an intention to reach carbon neutrality in the next three decades (Prensa Presidencia, 2019).
Statement in the domestic political debate	The intention to commit to net zero may appear in comments during parliamentary debates or cabinet meetings, which either discuss the feasibility of reaching net zero or express an intention to commit to net zero.	During a Parliamentary debate on the UK Energy Bill on 14 March 2016, Andrea Leadsom, the then Minister of State (Department of Energy and Climate Change) stated "the Government believe we will need to take the step of enshrining the Paris goal of net zero emissions in UK law – the question is not whether, but how we do it, and there is an important set of questions to be answered before we do." (Hansard, 2016)
Election-related documents	Around electoral cycles, political intentions to commit to net zero targets may appear in party manifestos or coalition agreements.	New Zealand's then Labour leader Jacinda Ardern announced three policy areas the party had agreed through coalition negotiations with the NZ First leader, one being a zero carbon act (reported by Mathiesen, 2017).

Form of commitment	Description	Examples
UNFCCC-related documents	A net zero pledge may appear in the country's NDC or submission of other UNFCCC documents, for example biennial reports or long-term low greenhouse gas emission development strategies.	<p>In its updated 2021 NDC, the Canadian government stated its objective to reduce emissions to net zero by 2050. A legislative bill for the Canadian Net-Zero Emissions Accountability Act (Bill C-12) was also proposed at the time.</p> <p>On 29 October 2021, Australia submitted its long-term emission reduction plan to the UNFCCC, which included a target to achieve net zero emissions by 2050.</p> <p>Spain's long-term decarbonisation strategy was submitted on 10 December 2020, alongside the NDC submitted by the EU as a whole.</p> <p>Fiji's most recent NDC was submitted on 31 December 2020.</p>
Presidential documents (or executive orders)	This refers to documents approved and published by a President (or other elected head of state) that declare a net zero target. The name of such documents varies by jurisdiction. These documents do not require approval by the legislative branch of government e.g. Parliament or Congress.	Executive Order 14008 on Tackling the Climate Crisis at Home and Abroad, signed by President Biden, declares an intention for the US to achieve net zero by 2050.
Executive policy document	Documents that have passed through an executive decision-making body and set out a current governmental policy objective to be net zero by a certain date (adapted from the Climate Change Laws of the World definition of 'policy document').	<p>In October 2020, Japan's Prime Minister announced a goal of reaching net zero by 2050. In December 2020, the Ministry of Economy, Trade and Industry published a Green Growth Strategy Through Achieving Carbon Neutrality in 2050.</p> <p>Fiji 5-year and 20-year National Development Plan, later reiterated in its Low Emission Development Strategy 2018–2050 and National Climate Change Policy.</p> <p>Spain National Energy and Climate Plan 2021–2030 included reference to a long-term goal to make Spain carbon neutral by 2050.</p>

Source: Authors, adapted from Levin et al. (2020) and Net Zero Tracker.

Integrating net zero commitment into the legal system

Depending on the national legal, political and socioeconomic context (Hilson, 2020), a country's net zero target may be integrated into the legal system through different routes or it may remain a political commitment, as it does in many cases. More than 70 countries have set national net zero targets, yet as of October 2023, only the EU and 29 countries³ have passed targets into legislation.

Some countries have integrated targets into law through new climate framework laws⁴ (e.g. Spain and Fiji) or existing ones (e.g. UK, Ireland and South Korea). Other countries have adopted energy laws with economy-wide net zero targets (e.g. Austria's Federal Act on the Expansion of Energy from Renewable Sources), or the legislative branch could formally adopt an executive strategy (e.g. Slovenia Resolution on Long-Term Climate Strategy until 2050 and China's 14th Five-Year Plan and 2035 Long-Term Objectives). While countries could in theory amend their constitutions to include net zero targets, to our knowledge no countries have done so at a national level, although some constitutions contain broad commitments to tackle climate change (Ghaleigh et al., 2022).

Integrating the net zero target into law is one way to ensure better accountability and mitigate the risk of discrepancy between intentions and action (Higham et al., 2021). A strong legal framework can also enhance the long-term predictability and continuity of policy (Averchenkova et al., 2021a). Adopting laws to delegate responsibilities related to the implementation of the net zero target, such as tasking independent advisory bodies to assess progress, may also strengthen long-term predictability (ibid.; Grosjean et al., 2016). Legal certainty enables actors to plan, thereby playing a role in market stability (Hilson, 2020). In a study of European coal mining and carbon-intensive mining regions, Hermwille et al. (2023) found that a legally-binding phase-out decision marked a "watershed moment" (p.9), as it weakened the narrative of resistance and redirected capacity towards adapting to the new situation.

Although laws can be amended or repealed, doing so requires overcoming greater practical and political barriers than for executive policies (Iacobuta et al., 2018). Integrating a commitment into law can also to an extent mitigate the risk of backsliding. Previous research on the UK Climate Change Act found that institutional arrangements created through the carbon budgets and the independent expert advisory body, the Climate Change Committee, have been "broadly effective" in creating safeguards against the "weakness of politicians" (Averchenkova et al., 2021b, p.256). In the implementation phase, ministers can be reminded that meeting the target is the law (ibid., 2021a). However, in some jurisdictions there may not be a strict separation of powers between executive and legislative branches of government. The adoption of an executive strategy may be perceived to have similar policy predictability and continuity to a legislative document passed in a democratic legal system.

³ We exclude EU member states that have not separately introduced and/or amended domestic legislation to integrate a net zero target.

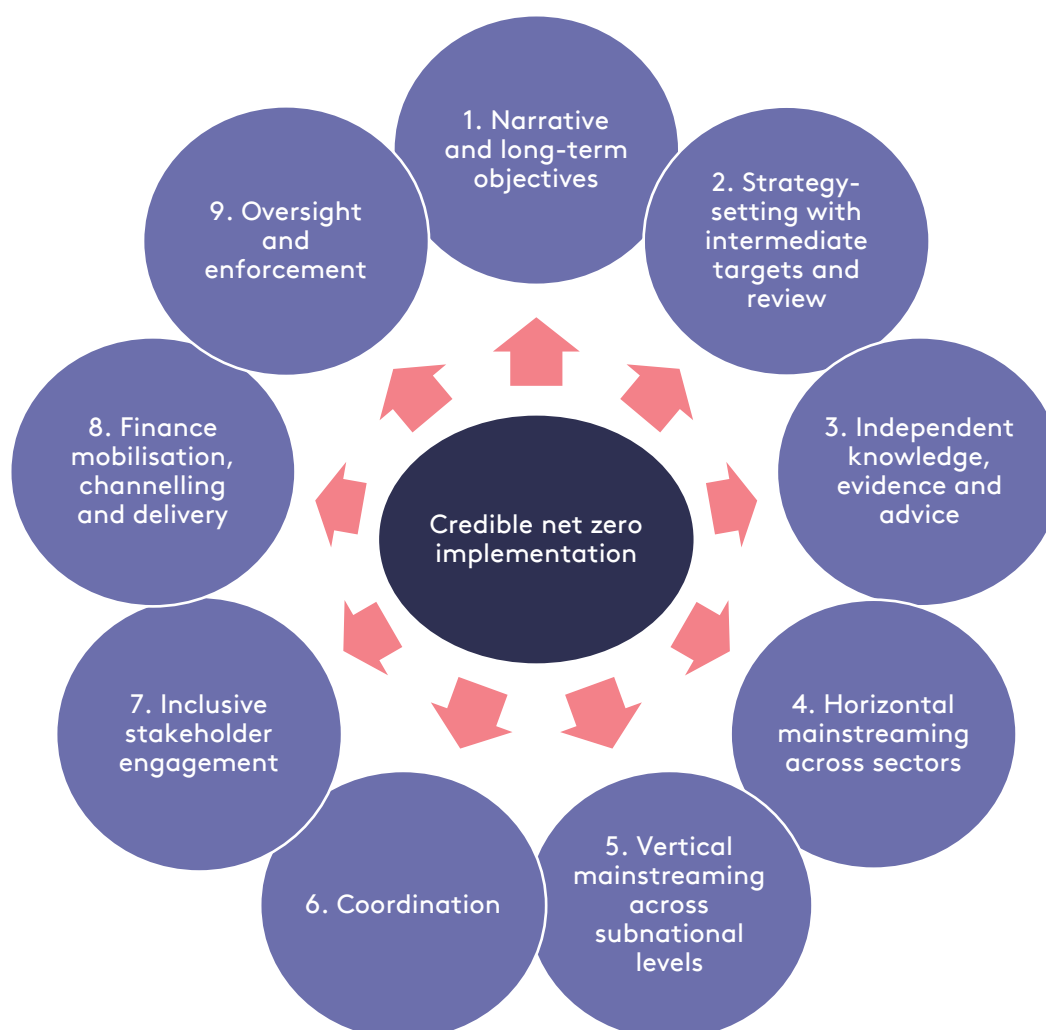
⁴ Framework laws establish the strategic direction for national climate change policy and often contain long-term and/or medium-term targets, institutional arrangements, and accountability mechanisms (Averchenkova et al., 2017; Higham et al., 2021; Duwe and Evans, 2020).

4. Linkages to core climate governance functions in net zero laws

Integrating net zero commitments into law (through one of the routes discussed in Section 3) is an essential step to ensuring that such commitments are credible, and not a form of performative politics (Aykut et al., 2021). However, to enable effective implementation of net zero targets, they must be supported by a national governance framework that responds to the needs of the specific country. An established body of literature identifies the key elements that enables effective climate governance (see Ecologic Institute, 2023; McIlhennon and Brennan, 2023; Sridhar et al., 2022; World Bank, 2020) and outlines some characteristics of credible net zero policy (see e.g. Fankhauser et al., 2022; Carbon Neutrality Coalition, 2022).

Assessment criteria based on nine core governance functions

Although national circumstances and governance mechanisms differ between countries, there are nine core governance functions that are essential for any country to consider when preparing to meet the challenge of climate change (adapted from Sridhar et al., 2022). These are:



We assess whether net zero laws have strong, moderate or weak direct linkages to the nine climate governance functions in their provisions, based on a set of criteria in Appendix 2. This analysis covers 25 national laws and the European Climate Law (see Figure 4.1 below and Appendix 4 for the list of laws reviewed). Four net zero laws were excluded: Austria's Federal Act on the Expansion of Energy from Renewable Sources; Liechtenstein's Emissions Trading Act; Slovenia's Resolution on Long-Term Climate Strategy until 2050; and the Maldives' Climate Emergency Act 9/2021.⁵

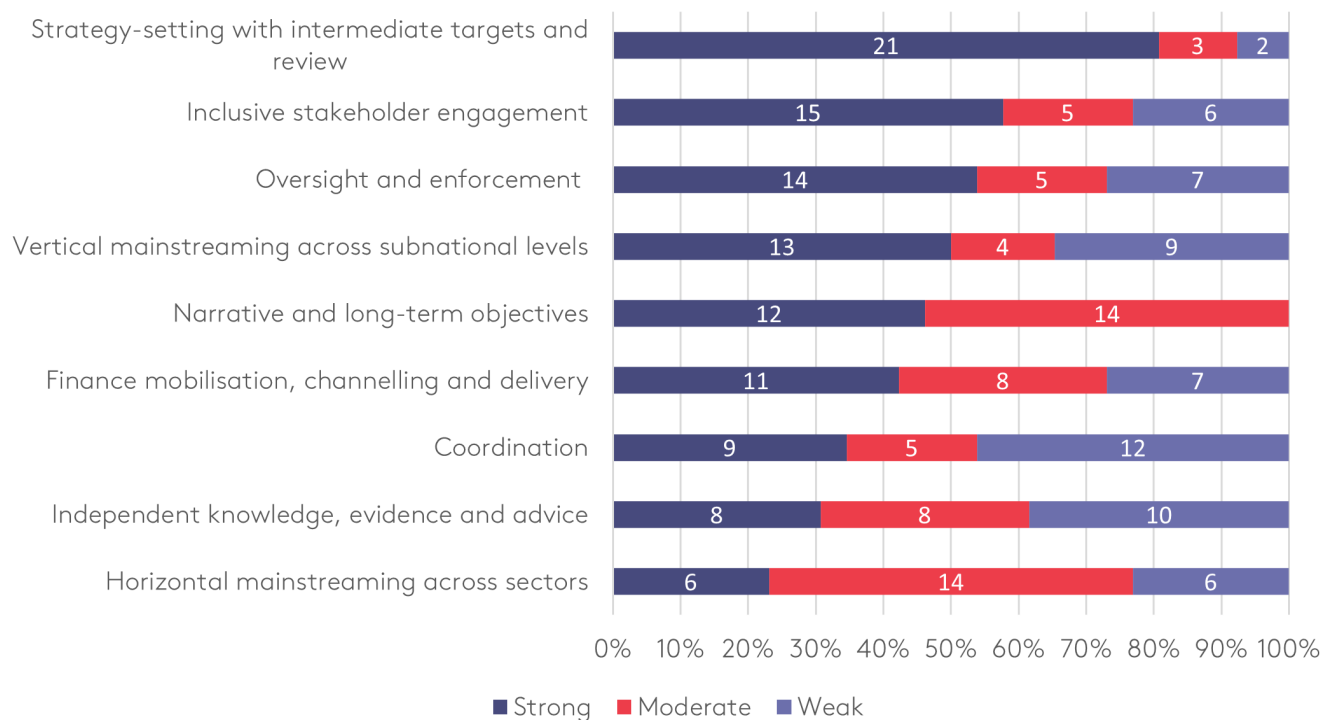
In designing net zero laws that satisfy climate governance functions, policymakers must note that not all functions need to be addressed through a new statutory instrument, and not all functions are equally relevant and applicable in every context. A climate framework law that contains a net zero target is only one part of the overall legal and policy landscape of a country. Some elements of the national climate governance system may be set up by an earlier climate legislation or through a another supporting legislative or executive instrument (e.g. in many countries, institutional arrangements such as a coordination mechanism on climate may have been established prior to the adoption of the net zero target). The absence of references to parts of our assessment criteria therefore does not necessarily mean that a particular governance function does not exist. Nevertheless, this scoping analysis is useful to understand which governance functions have been considered important enough to merit their direct reference alongside the net zero target.

⁵ Austria, Liechtenstein and Slovenia's laws were excluded because they are not climate framework laws and could not be compared with the other framework laws. The Maldives' net zero law was excluded due to language limitations.

Summary of findings

Here we present the results of our assessment of linkages to climate governance functions across the 26⁶ net zero laws, followed by an overview of each governance function in order of overall strength according to the analysis.

Figure 4.1. Percentage of net zero laws with direct linkages to the nine climate governance functions



Note: The graph shows analysis of 25 national laws and the European Climate Law. See Appendix 4 for the full list of laws reviewed.

Strategy-setting with intermediate targets and review

Existing net zero laws have focused on or made strong linkages with the governance function ‘strategy-setting, including intermediate targets and review’. Some laws directly prescribe obligations for governments to prepare decarbonisation strategies (e.g. Nigeria’s National Climate Change Action Plan in five-year cycles) and others may reference other legislation where those mechanisms have already been established (e.g. Greece’s law references the requirement to prepare National Energy and Climate Plans under the EU Governance Regulation). Notably, linkages to strategy-setting functions may also appear through a clear mandate for government to develop key policy instruments (e.g. carbon pricing systems or fiscal incentives). A requirement to implement policy instruments targeted at reducing emissions illustrates a clear intention and tangible plan to achieve net zero.

Narrative and long-term objectives

The nature of net zero as a long-term objective means that none of the laws assessed was found to have weak linkages to this governance function. The differentiating factor between strong and moderate linkages is the extent to which the long-term objectives are supported by a clear and

⁶ 25 national laws and the European Climate Law. See Appendix 4 for the full list of laws reviewed.

positive narrative around the net zero transition. As explained in Section 2, conveying a message of opportunity around the long-term benefits of the transition is a key driver for implementation and helps to rally support for action. South Korea's Framework Act on Carbon Neutrality and Green Growth expresses this theme clearly, stating at the outset that the Act: "shall overcome climate crisis through transitioning to carbon neutrality, and at the same time, turn it into an opportunity to expand national growth engines, strengthen national competitiveness in the international arenas, create jobs..." (Article 3[6]). However, a minority of laws include statements to this effect. Some laws also lack provisions to periodically increase the level of ambition in mitigation targets, which is important for long-term credibility.

Inclusive stakeholder engagement

Linkages to 'inclusive stakeholder engagement' have a relatively strong presence in the net zero laws as most include a requirement for public consultation at one or more stages of the policy process. For example, Canada's net zero law requires the government to consult when setting or amending a greenhouse gas target or emission reduction plan. However, the type of linkage varies significantly as there is no 'one size fits all' approach to establishing participatory mechanisms. For example, in Spain there is a requirement to establish a climate assembly whereas in Nigeria, the government must prepare and publish a public engagement strategy every year. The level of linkage also varies across the 26 laws – and even within the same law. In Australia, the Climate Change Act of 2022 states that the independent advisory body, the Climate Change Authority, "may make provision" (Article 14[3]) for public consultation in its advice for the first annual climate change statement, but for subsequent annual climate change statements, the Authority "must make provision" for public consultation (see Article 14[3A] of Australia's Climate Change Act 2022). Overall, most laws lack clarity on whether the form of public participation or stakeholder engagement is envisioned to be ongoing, regularly convened or formalised in institutional processes.

Oversight and enforcement

Linkages to oversight functions in the net zero laws are relatively strong, as most laws include at least a requirement for government-prepared progress reports and parliamentary oversight. However, the extent of parliamentary intervention specified in the laws varies. For example, in Fiji, the minister responsible for climate change must present a report on the National Climate Change Policy and Parliament must approve, amend or reject the policy. Yet in many other countries, the law is less detailed and only states a requirement to report to Parliament. For example, in Finland, the government is required to submit its adopted long-term climate plan, medium-term climate plan and climate plan for the land use sector to Parliament.

By contrast, most laws do not include linkages to enforcement mechanisms. Fiji (see Appendix 3) and Nigeria are two notable exceptions. The Climate Change Act in Nigeria specifies that ministries, departments and agencies that fail to meet carbon emission reduction targets will be subjected to a review, and its principal officers, upon being found liable, will be sanctioned and fined as appropriate. In New Zealand and Ireland, linkages to enforcement mechanisms are strong, but specifically in terms of imposing limits on available forms of judicial intervention. Both laws make judicial scrutiny a possibility in the case of non-compliance, but courts are prevented from imposing financial penalties, damages or compensation.

A study by Buylova et al. (2023) on long-term low-emission development strategies similarly finds that such documents lack a clear discussion of how decarbonisation pathways will be achieved and who is responsible for implementation. In the UK, the High Court found in 2022 that the net zero strategy, which sets out plans to decarbonise the economy, does not meet the government's obligations under the Climate Change Act to produce detailed climate policies that show how the UK's legally binding carbon budgets will be met in practice.

Coordination

Coordination refers to collaboration and engagement between and within public and private entities involved in climate action. Net zero laws with weak 'coordination' linkages did not state which entity or person is responsible for overseeing the government's response to its net zero target or cite another legal document where such institutional arrangements may be defined. The lack of linkage to coordination, however, does not mean that such responsibilities are not laid out elsewhere, but it does indicate that it was not considered among the top priorities for the net zero law to address. However, some laws include detailed provisions assigning responsibilities for coordination, creating new coordination bodies for net zero (e.g. South Korea's 2050 Carbon Neutrality Green Growth Committee), or designating existing climate change coordination bodies (e.g. Spain's Climate Change Policy Coordination Commission and Japan's Global Warming Prevention Headquarters), whereas some use other existing institutions (e.g. Taiwan's National Council for Sustainable Development). Not all coordination responsibilities have to be vested in one body. For example, in Finland the coordination responsibilities for the long-term climate plan are assigned to the Ministry of Economic Affairs and Employment, for the medium-term plan to the Ministry of the Environment, and for adaptation plans to the Ministry of Agriculture and Forestry. One area that is less clear, even in the laws with strong linkages to coordination arrangements, is the involvement of subnational institutions and the requirement for coordination bodies to report to a senior level of government (e.g. heads of state).

Horizontal mainstreaming across sectors

This climate governance function relates to coordination mechanisms but is distinct. Horizontal mainstreaming across sectors requires alignment of different ministerial portfolios to translate and implement the overall national net zero target into sectoral action. Several laws were found to have linkages to mechanisms for translating the net zero target into action across sectors, for example through preparing sectoral strategies or measures (e.g. Colombia), or establishing sectoral targets (e.g. Switzerland). However, linkages to shared accountability across sectoral ministries or agencies, or to mechanisms for progress assessment by sectors, were significantly weaker. This suggests that the foundations for horizontal mainstreaming exist, but the incentives for government departments and sectoral agencies to implement it with reporting requirements and to meet sectoral targets, and the consequences of failing to do so, are much less clear.

Independent knowledge, evidence and advice

Of the laws assessed, 18⁷ refer to, establish or grant powers for government to establish a separate body to provide expert advice. However, these linkages are not necessarily strong as the laws do not always make it clear whether this should be an *independent* body, and at which points in the policy cycle advice would be sought (i.e. whether advice is only required at target-setting stage, or also at policy development and during implementation). Moreover, only eight⁸ of these laws reference to some degree how the government may be required to respond to the advice.

Vertical mainstreaming across subnational levels

The assessment of linkages to vertical mainstreaming mechanisms in the laws produced mixed results. This is likely influenced by the diversity of political systems across the countries assessed.

⁷ These laws are from the following countries: Australia; Canada; Chile; Colombia; Denmark; European Union; Fiji; Finland; France; Germany; Greece; Iceland; Ireland; Luxembourg; New Zealand; Portugal; Spain; and the United Kingdom. Note that while Sweden established the Climate Council at the same time as passing the Climate Act, the Council is not referenced in the Act and is excluded from this count. We have included Colombia in the count although the law only establishes a Study Commission on Carbon Markets and not on climate policy more generally or net zero.

⁸ These laws are from the following countries: Australia; Canada; Denmark; France; Ireland; New Zealand; Spain; and the United Kingdom.

In some countries, regional governments have much stronger competencies and autonomy (e.g. Spain), while in others, competency for climate policymaking and implementation is concentrated at the national level (e.g. Fiji). In practice, this means it could be appropriate in some countries for the national net zero law to be prescriptive in assigning responsibilities to subnational institutions. However, it may highlight the need to have regard of and to consult with subnational institutions (such as in the UK's Climate Change Act). Overall, the weaker linkages to vertical mainstreaming are also consistent with an earlier finding on the general lack of detail on participation of subnational institutions in the coordination mechanism mentioned in the net zero laws.

Finance mobilisation, channelling and delivery

There is great variety in the strength of linkages in net zero laws to finance mobilisation, channelling and delivery. This governance function includes linkages to the requirement for the government to address climate change considerations in public financial management instruments (e.g. state budget, provisions for budget tagging for climate action) and for the publication and disclosure of information on public spending on climate change. Private finance linkages include the requirement for disclosure of climate risks. Some net zero laws refer to the mechanisms targeting both public and private finance (e.g. Fiji and Spain). Net zero laws that were found to have moderate linkages to finance governance functions (e.g. those of Sweden and Germany) link climate reporting with the state's budget processes but do not contain requirements for disclosure of climate risks by the private sector, or provisions to link mobilisation of private finance more generally.

5. Fiji and Spain: Integration and implementation of net zero commitments into governance systems

The presence of a particular governance function, or its reference in a net zero law, does not automatically ensure credible implementation. An assessment of all relevant legislative and executive instruments that establish the climate governance infrastructure is needed to accurately understand the extent to which net zero targets are supported by the key climate governance functions – and whether all functions are sufficiently addressed in a given country. The substantive characteristics of the established governance mechanisms that support net zero also need to be considered, such as the clarity and scope of mandates for coordination, or stakeholder engagement bodies and how much they report to government.

To gain greater insights into the integration and implementation of net zero into national climate governance systems, we have conducted a detailed desk-based analysis for Fiji and Spain and triangulated this analysis with feedback from semi-structured interviews with experts in these countries. Interviewees were shown the nine climate governance functions used in this report and asked to comment on whether they consider the mechanisms supporting those functions to be strong, moderate, or weak in practice in their country.

Table 5.1 and Appendix 3 provide a summary of our findings from analysing Fiji's Climate Change Act 2021 and Spain's Law 7/2021 on Climate Change and Energy Transition (and any related legislation referenced in the net zero laws). This is shown alongside the results of the interviews on how well they function in practice. Our more detailed observations follow the table.

Table 5.1. Assessment of the strength of linkages to climate governance functions in net zero laws vs. interviewees’ perceptions of how they work in practice, in Fiji and Spain

Governance function	Fiji		Spain	
	Results from desk analysis of net zero law	Dominant perceptions in interviews	Results from desk analysis of net zero law	Dominant perceptions in interviews
Narrative and long-term objectives	Green	Green	Green	Green
Strategy-setting with intermediate targets and review	Green	Green	Green	Green
Independent knowledge, evidence and advice	Orange	* Moderate	Green	Orange
Horizontal mainstreaming across sectors	Yellow	Green	Yellow	Green
Vertical mainstreaming across subnational levels	Yellow	Orange	Green	Orange
Coordination	Green	Green	Green	Orange
Inclusive stakeholder engagement	Green	* Moderate	Green	* Moderate
Finance mobilisation, channelling and delivery	Green	Orange	Green	* Moderate
Oversight and enforcement	Green	Green	Green	* Moderate

Notes: Green represents ‘strong’; yellow represents ‘moderate’ and red represents ‘weak’. Where two-thirds or more interviewees assessed an governance function as ‘strong’, ‘moderate’ or ‘weak’, the whole bar is shaded the corresponding colour. Where interviewees’ assessments were split roughly 50/50, the split in opinion is represented by shading both colours. Where assessments were more divided, the averaged assessment result is shown. For example, 40% strong, 20% moderate, 40% weak is shown as moderate. These are marked with an asterisk (*). See further details in Appendix 3.

Observations

Comprehensive laws with strong linkages to climate governance functions

Both Fiji and Spain’s net zero laws are very comprehensive and directly address or make strong linkages to most of the nine core climate governance functions. However, the assessment by interviewees of the governance mechanisms supporting net zero in practice is less positive. Most interviewees noted the important role of the countries’ climate legislation in enabling the

government to develop climate-related strategies and to clarify the overall long-term objectives and narrative for the net zero transition.

"[The Act] is definitely a vehicle for us to move forward in terms of economic strategies, and even more importantly [to assign] roles and responsibilities to different actors. If people don't know what to do, or that something is expected of them, they would never do it, right?" (International organisation interviewee, Fiji)

Some interviewees noted progress in policy development in some sectors, such as in the energy sector in Spain, but identified difficulties in the advancement of other sectors (e.g. buildings and transport sectors in Spain and agriculture in Fiji). In both countries, interviewees emphasised the difficulty of ensuring that practical policies are aligned with long-term objectives and that they overcome implementation hurdles (social, economic and political).

Different country contexts yet similar challenges with coordination, horizontal and vertical mainstreaming

While the two countries are very different, implementation challenges were noted by interviewees around a similar set of governance functions, namely 'horizontal mainstreaming', 'vertical mainstreaming', 'coordination', and 'mobilisation and channelling of finance'. For example, Fiji has made significant progress in setting up a robust coordination mechanism on climate change, including through mandating the designation of climate focal points in the line ministries through the climate law and setting a National Climate Change Coordination Committee. Despite this, many interviewees noted that coordination remains a big challenge that is further complicated by the fact that the Climate Change and International Cooperation Division, Ministry of Economy in Fiji (now the Climate Change Division, under the Office of the Prime Minister) has moved multiple times and has a high rate of staff attrition. Furthermore, competition between ministries for limited financial resources and limited technical capacity in Fiji create challenging conditions for a coherent and coordinated climate response, despite the Act setting out the processes in full.

As a multi-level state, Spain faces challenges in coordinating its implementation of net zero policies and legislation. Many interviewees spoke about insufficient vertical coordination, and the need for the national government to improve coordination, engagement and dialogue with the autonomous communities. Some also noted persistent instances of siloed working between ministries. A private sector interviewee stressed that the lack of coordination and engagement between central government and certain regional governments has created a significant barrier and delay to the rapid deployment of renewables across Spain. Another private sector interviewee emphasised that the fragmented regulatory landscape means that, in order to "do the same work across different regions", renewable companies need to dedicate additional efforts and resources to understand regional legislation.

A government advisor interviewee in Spain felt that because there is a more complex regulatory landscape for the regions to navigate than at national or city level, they are moving much slower:

"The regions are not moving that fast. I guess, because they are in a very complex [situation] of how to translate the national legislation, the European legislation, given the different competences of the states here..." (Government advisor, Spain)

However, the same advisor also highlighted that Spain's national law containing a net zero target – the "national pact on climate change" – has indirectly started to push regions to think more structurally about whether they need their own legislation that complements the national climate law. Several interviewees cited the positive example of effective vertical coordination during the Covid-19 pandemic and the potential to learn from and replicate that experience in the context of climate change. Some interviewees in Spain suggested that legal interventions would ultimately be necessary for establishing stronger vertical coordination mechanisms on climate change and related policies.

Finance as the key to implementation

Raising sufficient finance through international and domestic channels is consistently noted by interviewees in Fiji as the deciding factor in whether implementation of the Climate Change Act and net zero target will be successful. Several interviewees recognised significant progress in setting up financial mechanisms and procedures, and substantial efforts by the government to mobilise international finance, after passing the Act. According to interviewees, areas identified as needing further improvement are stronger monitoring systems and budget tagging of domestic finance for climate change projects. A government advisor interviewee confirmed that these improvements are now underway in Fiji. Some interviewees noted that mainstreaming climate change concerns into public finance was easier when the climate change division was located within the Ministry of Economy.

Interviewees in Spain were divided in their assessments of Spain's ability to mobilise, channel and deliver finance for the low-carbon transition, but more interviewees overall felt that this function is weak in Spain's net zero governance. They raised concerns about the barriers and challenges in deploying finance due to a highly bureaucratic financial system, and the need to establish better mechanisms for channelling finance to the regions. At the same time, several interviewees noted the important role of the recovery funding from the EU in ensuring that Spain can advance on the implementation of its net zero and intermediate targets. Illustrating this point, a public sector interviewee in Spain noted that: *"without the money of the recovery plan... without the pandemic, Spain would have no money to do hydrogen..."*

Efforts to develop credible knowledge and independent advice

Mechanisms for ensuring credible knowledge generation and independent advice are considered very important for the successful implementation of net zero commitments (Averchenkova et al., 2021b). Fiji's climate change law does not address this governance function directly. Many interviewees from Fiji noted that the country was still in the early stages of developing its own national capacity to work on climate change and ensuring greater continuity in policies, instead of outsourcing to international consultants. The interviewees noted a lack of credible data – and of national ownership over data – at the time that the climate change law and net zero target were adopted. Recent efforts have focused on setting up the system for preparation of data, including developing a national system of emissions inventory and monitoring, reporting and verification (MRV), improving public access to information, and embedding long-term consultants to build national capacity – much of which is enabled through international support and finance. Interviewees saw the idea of creating an independent advisory body on climate as challenging in practice given that the community of climate change experts is small. This also raises difficulties in ensuring independence, alongside general limitations in capacity. Some participants saw value in developing a regional advisory body.

Spain's climate change law requires the establishment of an independent advisory body on climate change, similar to those in many other countries (e.g. in the UK and New Zealand). In Spain all interviewees saw great value in implementing this aspect of the law and many expressed frustration around the delay to the process.

Need for meaningful stakeholder engagement and public participation

The interviews revealed a great divergence in views on the current strength of some governance functions, namely stakeholder engagement mechanisms. This can be explained in part by the diverse spectrum of actors with whom the interviewees are associated and the different needs and expectations they have of those governance mechanisms. In Fiji, some interviewees were critical of the lack of extensive consultation prior to the adoption of the Climate Change Act, while many noted significant progress in improving stakeholder consultation and engagement with civil society, which they considered an important and positive development. Several

interviewees saw outreach to and engagement with the Fijian private sector as an important future priority. Multiple interviewees also emphasised the need to continue raising awareness of the Climate Change Act both within and outside government. One interviewee in Fiji raised the concern that, because the law was developed with the help of external consultants, these might create challenges with implementation due to limited awareness and understanding on practical implications from the Act among key government institutions. A public sector interviewee also highlighted the challenge that Fiji is currently facing in implementing Part 10 of the Climate Change Act, which sets out provisions on carbon sequestration and emission reduction projects, which may affect land rights. This is a politically sensitive area where stakeholder engagement is crucial, as implementation may in particular affect Indigenous Peoples. This part of the Act contains complex legal arrangements, and it was emphasised that capacity-building is needed here, along with resources to guide communities on the practical implications.

In Spain, the interviewees noted significant progress on stakeholder engagement, with multiple consultation mechanisms on climate change, including the importance of public participation through the Citizens' Assembly on Climate Change:

"Compared to where we were a decade ago, this is night and day – it's just a huge amount of consultation, and you know previously it was back room deals, but now it's not." (Private sector interviewee, Spain)

Yet some interviewees were disappointed with the level of visibility and follow-up to the Assembly and recommended improving engagement with the regional actors. One interviewee, reflecting on the outcome of the June 2023 elections in Spain, stated that the greatest priority for the government is to create spaces for meaningful social dialogue with citizens and institutions at different levels of governance to ensure stronger buy-in and social support for the net zero transition.

Room for greater accountability and transparency

In relation to oversight and enforcement, interviewees in Spain were divided in their assessment. However, many raised the need to strengthen transparency in reporting and assessment of implementation. In Fiji, according to interviewees, there is room for increased legislative scrutiny and parliamentary oversight around the Climate Change Act. In both countries, the role of courts and litigation was not raised as a significant driver or barrier to net zero governance. An interviewee in Fiji, however, commented that this is likely because public interest litigation on climate is still very new and emergent in Fiji. Cases have been brought under environmental management laws, but the pathway for climate litigation is not yet established. There may be potential for regional approaches in this respect, for example engaging in capacity-building across the Pacific islands and exchanging of lessons learnt across these nations. Fiji could play a significant role here, having already started its journey towards net zero governance and given its strong legal framework and position as a first-mover in the Pacific region.

In Spain, two interviewees felt that the litigation brought against the government (*Greenpeace v. Spain I* and *Greenpeace v. Spain II*) had insignificant impact. Both cases challenged the sufficiency of the National Energy and Climate Plan to meet Paris Agreement goals, but they were both dismissed by the Supreme Court, which ruled that the government's actions were in line with the law and the climate commitments taken by the EU (Lombardi, 2023). Although NGO interviewees in Spain had mixed views on the usefulness of litigation in driving progress towards net zero, they agreed that accountability and transparency from the government needs to be strengthened.

6. Conclusions and recommendations

Effective implementation of the Paris Agreement and its goal of limiting average global temperature rise to 1.5 degrees requires urgent ramping up of political ambition through commitments to net zero targets. It also requires strong integration of those targets into national legal and governance frameworks to ensure effective implementation.

This assessment of the principal drivers for net zero commitments and the level of integration of climate governance functions into net zero laws enables countries to develop better informed strategies for enhancing ambition and credibility of implementation.

In this section we sum up our main findings and present recommendations for a range of actions.

Enabling political commitment to net zero

Political commitments to net zero and their integration into national governance systems follow a variety of pathways that are rooted in the national circumstances of a country. These pathways are influenced by many shared enabling factors (and challenges), albeit with nuances and interactions that are unique to each national context. By amplifying key drivers relevant to a specific country, political ambition on net zero can be increased, and its effective implementation can be advanced.

The importance of international peer pressure, drive for leadership and supranational legal requirements as enabling factors for net zero commitments as highlighted in this report reaffirms the need for strong international processes and agreements on climate change in driving domestic action globally. Through its ambitious leadership stance and demonstration of commitment to net zero – all while battling severe climate change impacts at home – Fiji aspires to influence other countries, especially large emitters, to follow suit. In another example, the EU's leadership and regulatory framework strongly influences Spain's governance pathway to net zero.

International consensus around the core scientific basis for net zero, as established through the IPCC and backed up by nationally-specific data and analysis, are important drivers – and in some cases pre-conditions – for both political commitment to and effective implementation of net zero targets.

The economic and social benefits of decarbonising economies, such as improved energy security, access to greener investment and climate finance and leadership in low-emission technology markets (all of which apply to Spain and Fiji), can be powerful drivers for commitment. In taking ambitious steps to committing to net zero, Fiji hopes to gain increased support through international climate finance to support its mitigation and adaptation needs. This expectation should be met by the international climate finance community and, if successful, may lead to greater diffusion of net zero policy and increased global ambition.

However, the potential social costs of net zero and the failure of policy to address placing disproportionate burdens on some parts of society create opposition and hinder the transition. Framing the net zero debate around economic advantages and a just transition is found to be an effective strategy for strengthening political support in Spain, for example.

The presence of net zero drivers does not automatically lead to a political commitment to net zero or its integration through the legal system. Such commitment requires opportunities to be created and pursued, and relies on a variety of actors to exert social pressure – including national and local governments, heads of state or other prominent politicians, civil society and business. Prominent leaders acting as climate champions in international arenas can intensify this pressure, particularly where a country holds a key leadership position such as hosting a meeting of the COP.

At the domestic level, pressure may be driven by coalitions between businesses, NGOs and political actors, or by citizens alarmed by the experience and impacts of climate change.

Key recommendations to building and maintaining political commitment to net zero:

- **Governments, civil society, businesses and funding providers** should recognise the crucial importance of strengthening national governance systems to ensure sustained political commitment and credible implementation of net zero globally.
- **International organisations, national governments and civil society** should work towards strengthening the effectiveness of the UNFCCC process and other relevant international climate change fora, ensuring they provide strategic guidance and support mechanisms for pathways to net zero. They should also build trust in the process.
- **Knowledge providers and international networks of civil society, businesses, legislators and governments** should systematically gather knowledge and strengthen exchange and capacity-building internationally and domestically across all levels of governance on specific experiences of using the drivers for net zero to create, and maintain, political commitment and public support.
- **International climate finance providers** should deliver greater support to developing countries that, like Fiji, are taking ambitious commitments towards net zero, and focus support on their overall climate and development-related needs, including building resilience to climate change risks, adapting to its effects, and utilising synergies between adaptation and mitigation responses.
- **Politically active organisations like NGOs, business associations, and think tanks should:**
 - Identify and support the development of climate champions that can act on political windows of opportunity to push for net zero commitments.
 - Exert social pressure through a variety of strategies best suited to the national context, such as: framing the debate around benefits of net zero and a just transition; running campaigns; forming coalitions across sectors and types of stakeholders; carrying out public opinion surveys and advocating public participation (such as in citizens assemblies), and climate litigation.

Supporting implementation of net zero through national climate governance

While national circumstances and governance mechanisms differ between countries, there are core governance functions that are essential for any country in the design and implementation of their climate commitments.

The 26 net zero laws analysed in this report predominantly focus on setting a high-level narrative and direction, and also link to governance mechanisms related to strategy development and intermediate target review. The laws have comparatively less of a focus on mechanisms for generating an independent knowledge base, coordination arrangements and horizontal mainstreaming across sectors.

While it remains crucial to establish or link to anticipatory governance mechanisms like five-year decarbonisation strategies in net zero laws and retain flexibility for changing socioeconomic and political circumstances, our case studies suggest that there should be a more concerted effort to prevent backsliding and delayed implementation. Strategies require significant time and resources, and as suggested by interviewees in Fiji and Spain, this may lead to developing strategies on rushed timelines and without access to full sets of data. This may in some cases be detrimental to the success of implementation later on.

It is crucial that net zero targets and their implementation are strongly rooted in inclusive stakeholder engagement and ongoing public participation. This helps to build trust and gain buy-in on long-term net zero objectives, and to retain public support through the implementation phase. Our case studies reveal that encouraging progress is being made on these pillars, but also show that challenges remain around continuity, transparency and follow-up to these processes.

Key recommendations for governance systems that enable net zero implementation:

- **Governments should strengthen capacity-building on climate change at the national, subnational, and sectoral level, with the assistance and expertise of local and international NGOs and the broader research community.** Actions may include:
 - Ensuring that measures are in place to retain staff in key ministries, ensuring that the coordination and implementation of net zero commitments are owned and led by the country itself. This could include providing incentives, planning career pathways and succession planning.
 - For example, in Fiji, given the Climate Change Act has not yet formally commenced, there is a need to continue raising awareness about its provisions and strengthen capacity for its implementation among the relevant governmental departments, e.g. through targeted workshops on parts of the Act relevant to each institution's mandate.
 - For international climate finance providers, continuing to support such capacity-building initiatives in developing countries.
- **Governments should ensure ministerial departments and agencies have sufficient mandate, and financial and human resources,** to translate net zero into specific legislation and policies and oversee implementation.
- **Governments should strengthen coordination among the key governmental institutions across national and subnational levels,** including:
 - Clarifying the agency in charge of coordination across sectors, the mechanisms through which coordination occurs, and what issues are addressed and when.
 - Strengthening mechanisms for coordination across national and subnational governments, including ensuring funding mechanisms are in place to enable subnational action. For example, in Spain, lessons could be learned from the experience of effective government coordination throughout the COVID-19 pandemic.
 - Ensuring net zero targets are integrated into relevant national, subnational and sectoral policies.
- **Governments and legislators should firmly embed mechanisms for independent expert advice in governance systems,** for example through:
 - Establishing mechanisms for government to seek independent advice at the key stages of the policy process: setting intermediate targets; determining the policies to meet the targets; and reviewing progress.
 - In Spain, the independent expert advisory body, as envisaged in Spain's climate law, should be established and adequately resourced as soon as possible.
 - Outlining processes for government (or Parliament) to respond to the independent advice, including who is responsible for addressing the advice and the form of the response.
- **Governments should assess and reform the existing legal landscape for mobilising and delivering finance for the net zero transition,** for example through:
 - Streamlining permitting regulations for renewable energy projects and simplifying

administrative procedures to access subsidies or other government support.

- Ensuring that mechanisms to deliver international climate finance to national, subnational and local communities are transparent and efficient.
- **Governments should ensure that net zero targets and underlying policies are developed and implemented based on ongoing inclusive stakeholder engagement and public participation processes.** These may include:
 - Requiring stakeholder engagement and public participation in the key stages of a policy's development and implementation.
 - Defining the mechanisms through which stakeholder engagement and public participation will be implemented (e.g. establishing which entity is responsible for convening the process and how follow-up of outcomes will happen).
 - Convening citizens' assemblies and in areas particularly vulnerable to the impacts of the transition, focused stakeholder engagement and public participation around just transition.
 - Strengthening and improving transparency around the follow-up to stakeholder engagement and public participation processes.
- **Knowledge providers** should collect more evidence on the effectiveness of different designs of governance frameworks and processes in supporting net zero implementation in a variety of socioeconomic and political contexts.

References

- Álvarez-García O, Sureda-Negre J, Comas-Forgas R and Oliver-Trobat M (2023) The Spanish population's interest in climate change based on Internet searches. *Humanities and Social Sciences Communications* 10(1): 1-9
- Averchenkova A, Fankhauser S and Finnegan J (2021a) The impact of strategic climate legislation: evidence from expert interviews on the UK Climate Change Act. *Climate Policy* 21(2): 251-263
- Averchenkova A, Fankhauser S and Finnegan J (2021b) The influence of climate change advisory bodies on political debates: evidence from the UK Committee on Climate Change. *Climate Policy* 21(9):1218-1233
- Averchenkova A, Fankhauser S and Nachmany M (2017) *Trends in climate change legislation*. Edward Elgar Publishing.
- Averchenkova A and Guzman Luna S (2018) *Mexico's General Law on Climate Change: Key achievements and challenges ahead*. London: Grantham Research Institute on Climate Change and the Environment and Centre for Climate Change Economics and Policy, London School of Economics and Political Science
- Averchenkova A and Lázaro-Touza L (2020) *Legislating for a low carbon transition in Europe: experiences in the UK, France and Spain*. Elcano Royal Institute
<https://media.realinstitutoelcano.org/wp-content/uploads/2021/10/wp5-2020-averchenkova-lazarotouza-legislating-for-low-carbon-transition-europe-experiences-uk-france-spain.pdf>
- Averchenkova A, Plyska O and Wahlgren J (2022) *Addressing the climate and environmental crises through better governance: The Environmental Democracy approach in development co-operation*. <https://www.wfd.org/what-we-do/resources/addressing-climate-and-environmental-crises-through-better-governance>
- Aykut S, Morena E and Foyer J (2021) 'Incantatory' governance: global climate politics' performative turn and its wider significance for global politics. *International Politics* 58: 519-540. <https://doi.org/10.1057/s41311-020-00250-8>
- Bailey I, Fitch-Roy O, Inderberg T and Benson D (2021) Idealism, pragmatism, and the power of compromise in the negotiation of New Zealand's Zero Carbon Act. *Climate Policy* 21(9): 1159-1174
- Ballew M, Myers T, Uppalapati S, Rosenthal S, Kotcher J, Campbell E, Goddard E, Maibach E, and Leiserowitz A (2023) *Is distress about climate change associated with climate action?* New Haven, CT: Yale Program on Climate Change Communication.
- Bolet D, Green F and Gonzalez-Eguino M (2023) *How to Get Coal Country to Vote for Climate Policy: The Effect of a 'Just Transition Agreement' on Spanish Election Results*. <https://dx.doi.org/10.2139/ssrn.4394195>
- Buylova A, Nasiritousi N, Duit A, Reischl G and Lejon P (2023) *Paper tiger or useful governance tool? Understanding long-term climate strategies as a climate governance instrument*. Presented at European Consortium for Political Research, Prague. 4-8 September.
- Carter N and Little C (2021) Party competition on climate policy: The roles of interest groups, ideology and challenger parties in the UK and Ireland. *International Political Science Review* 42(1): 16-32
- Clare A, Fankhauser S and Gennaioli C (2017) The national and international drivers of climate change legislation. In *Trends in Climate Change Legislation [Averchenkova, AF, Sam and M. Nachmany (eds.)]* (pp. 19-36). Cheltenham: Edward Elgar Publishing.

- Carbon Neutrality Coalition (2022) *Framework for Net-Zero Climate Action*. https://carbon-neutrality.global/wp-content/uploads/2022/12/Visual-summary_CNC-framework.pdf
- CMS Albiñana & Suárez de Lezo (2021) *Spain's Climate Change and Energy Transition Act 7/2021*. <https://cms.law/en/media/local/cms-asl/files/publications/publications/analysis-of-spain-s-climate-change-and-energy-transition-act-7-2021?v=2>
- Duwe M and Evans N (2020) *Climate Laws in Europe: Good Practices in Net-Zero Management*. Berlin: Ecologic Institute. <https://www.ecologic.eu/17233>
- Ecologic Institute (2023) *Climate Framework Laws Info-Matrix*. <https://www.ecologic.eu/19320>
- Erb T, Perciasepe B, Radulovic V and Niland M (2022) Corporate Climate Commitments: The Trend Towards Net Zero. In *Handbook of Climate Change Mitigation and Adaptation* (pp. 2985-3018). Cham: Springer International Publishing.
- Fankhauser S, Smith S, Allen M, Axelsson K, Hale T, Hepburn C, Kendall J, Khosla R, Lezaun J, Mitchell-Larson E and Obersteiner M (2022) The meaning of net zero and how to get it right. *Nature Climate Change* 12(1): 15-21.
- Farstad F (2018) What explains variation in parties' climate change salience? *Party Politics* 24(6): 698-707
- Flagg J (2018) Carbon Neutral by 2021: The past and present of Costa Rica's unusual political tradition. *Sustainability* 10(2); 296.
- Flagg J (2015) Aiming for zero: what makes nations adopt carbon neutral pledges? *Environmental Sociology* 1(3): 202-212.
- Ghaleigh N, Setzer J and Welikala A (2022) The complexities of comparative climate constitutionalism. *Journal of Environmental Law* 34(3): 517-528
- Ghaleigh N and Welikala A (2021) Need for a constitutional and statutory framework on the environment and climate change in Sri Lanka. Web page. <https://www.ft.lk/opinion/Need-for-a-constitutional-and-statutory-framework-on-the-environment-and-climate-change-in-Sri-Lanka/14-715165%5d>
- Grosjean G, Acworth W, Flachsland C and Marschinski R (2016) After monetary policy, climate policy: is delegation the key to EU ETS reform? *Climate Policy* 16(1): 1-25
- Gupte, E (2021) COP26: Nigeria vows to reach net-zero by 2060 but stresses role of gas. *S&P Global Commodity Insights*. <https://www.spglobal.com/commodityinsights/en/market-insights/latest-news/energy-transition/110321-cop26-nigeria-vows-to-reach-net-zero-by-2060-but-stresses-role-of-gas>
- Hale T, Smith S, Black R, Cullen K, Fay B, Lang J and Mahmood S (2022) Assessing the rapidly-emerging landscape of net zero targets. *Climate Policy* 22(1): 18-29
- Hansard (2016) *Daily Hansard Debate*. Web page. <https://publications.parliament.uk/pa/cm201516/cmhansrd/cm160314/debtext/160314-0003.htm>
- Hermwille L, Schulze-Steinen M, Brandemann V, Roelfes M, Vrontisi Z, Kesküla E, Anger-Kraavi A, Trembaczowski Ł, Mandrysz W, Muster R and Zygmunt-Ziemianek A (2023) Of hopeful narratives and historical injustices—An analysis of just transition narratives in European coal regions. *Energy Research & Social Science* 104: 103263
- Higham C, Averchenkova A, Setzer J and Koehl A (2021) *Accountability Mechanisms in Climate Change Framework Laws*. London: Grantham Research Institute on Climate Change and the Environment and Centre for Climate Change Economics and Policy, London School of Economics and Political Science

- Hilson C (2020) Hitting the target? Analysing the use of targets in climate law. *Journal of environmental law* 32(2): 195-220.
- Iacobuta G, Dubash NK, Upadhyaya P, Deribe M and Höhne N (2018) National climate change mitigation legislation, strategy and targets: a global update. *Climate policy* 18(9): 1114-1132
- ILO [International Labour Organisation] (2015) *Guidelines for a just transition towards environmentally sustainable economies and societies for all*. https://www.ilo.org/wcmsp5/groups/public/@ed_emp/@emp_ent/documents/publication/wcms_432859.pdf
- ITJ [Instituto para la Transición Justa] (2022) *Spain, towards a just energy transition*. https://www.transicionjusta.gob.es/Documents/Noticias/common/220707_Spain_JustTransition.pdf
- ITJ [Instituto para la Transición Justa] (2023) *Spain, 4 years towards a just energy transition*. https://www.transicionjusta.gob.es/Documents/Publicaciones%20ES%20y%20EN/Spain_4%20years%20towards%20a%20just%20energy%20transition.pdf
- IPCC [Intergovernmental Panel on Climate Change] (2018) *Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty* [Masson-Delmotte V., P. Zhai, H.-O. Pörtner, D. Roberts, J. Skea, P.R. Shukla, A. Pirani, W. Moufouma-Okia, C. Péan, R. Pidcock, S. Connors, J.B.R. Matthews, Y. Chen, X. Zhou, M.I. Gomis, E. Lonnoy, T. Maycock, M. Tignor, and T. Waterfield (eds.)]. Cambridge University Press, Cambridge, UK and New York, NY, USA, 616 pp. <https://doi.org/10.1017/9781009157940>
- Jeudy-Hugo S, Lo Re L and Falduto C (2021) *Understanding countries' net-zero emissions targets*. OECD/IEA Climate Change Expert Group Papers, No. 2021/03, Paris: OECD Publishing, <https://doi.org/10.1787/8d25a20c-en>
- Joo J, Paavola J and Van Alstine J (2023) Contested net-zero target setting in a transitioning country: The case of South Korea. *Futures*, 147: 103114
- La Moncloa (2015) Rajoy highlights Spain's commitment to the challenge of climate change. Press release, 30 November. <https://www.lamoncloa.gob.es/presidente/actividades/Paginas/2015/301115rajoyparis.aspx>
- Ladrech R and Little C (2020) Drivers of political parties' climate policy preferences: lessons from Denmark and Ireland. In *Climate Politics in Small European States* (pp. 37-58). Routledge
- Lang C, Ryder J (2016) The effect of tropical cyclones on climate change engagement. *Climatic Change* 135: 625-638. <https://doi.org/10.1007/s10584-015-1590-0>
- Lázaro Touza L, Averchenkova A and Escribano Francés G (2022) *High-impact green recovery in the EU's 'big five' (emitters): key elements and caveats*. Elcano Policy Paper. Madrid: Real Instituto Elcano. <https://www.realinstitutoelcano.org/en/policy-paper/high-impact-green-recovery-in-the-eus-big-five-emitters-key-elements-and-caveats/>
- Lázaro Touza L and Escribano G (2019) Los españoles ante el cambio climático. Web page. <https://www.realinstitutoelcano.org/blog/los-espanoles-ante-el-cambio-climatico/>
- Levin K, Rich D, Ross K, Fransen T and Elliott C (2020) *Designing and Communicating Net-Zero Targets*. Washington, DC: World Resources Institute. <https://www.wri.org/research/designing-and-communicating-net-zero-targets>
- Lin A (2022) Making net zero matter. *Washington & Lee Law Review*. 79: 679.

- Lo J and Farand C (2021) Turkey ratifies the Paris Agreement after approving a 2053 net zero goal. *Climate Home News*, 6 October. <https://www.climatechangenews.com/2021/10/06/turkey-ratifies-paris-agreement-approving-2053-net-zero-goal/>
- Lockwood M (2013) The political sustainability of climate policy: The case of the UK Climate Change Act. *Global Environmental Change* 23(5): 1339-1348
- Lombardi P (2023) Spain's Supreme Court dismisses lawsuit against Madrid's climate plan. *Reuters*, 27 July. <https://www.reuters.com/article/spain-climate-lawsuit-idAFL8N39D6YF>
- Loveday J, Morrison G and Martin D (2022) Identifying knowledge and process gaps from a systematic literature review of net-zero definitions. *Sustainability*, 14(5): 3057
- Madariaga Gómez de Cuenca M (2021) Is Chile building good climate governance? Reflections on the drafting process of the climate change framework law. *Environmental Law Review* 23(1): 40-48
- Maris G and Flouros F (2021) The green deal, national energy and climate plans in Europe: Member States' compliance and strategies. *Administrative Sciences* 11(3): 75
- Mathiesen K (2017) Jacinda Adern commits New Zealand to zero carbon by 2050. *Climate Home News*, 20 October. <https://www.climatechangenews.com/2017/10/20/jacinda-ardern-commits-new-zealand-zero-carbon-2050/>
- Maxwell L, Mead S, van Berkel D (2022) Standards for adjudicating the next generation of Urgenda-style climate cases. *Journal of Human Rights and the Environment* 13(1): 35–63. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3955144
- McIlhennon C and Brennan C (2023) *Climate Laws: What are the Experts Saying?* Environmental Justice Network Ireland. <https://ejni.net/climate-governance-observatory/climate-laws-in-action/>
- Merner, D, Benjamin L, Ercole W, Keuschnigg I, Kunik J, Martinez Toral K, Peterson L, Setzer J, Sokol K, Tandon A, Turowski K (2023) *Comparative analysis of legal mechanisms to net-zero: Lessons from Germany, the United States, Brazil, and China*. Presented at European Consortium for Political Research, Prague. 4–8 September.
- Minder R and Erling B (2023) Poland digs in to defy EU over lignite mine. *Financial Times*, 8 August. <https://www.ft.com/content/0850c177-4dce-4fa7-a00f-2020124aec98>
- MITECO [Ministerio para la Transición Ecológica y el Reto Demográfico] (2020) *Plan Nacional de Adaptación al Cambio Climático 2021-2030*. <https://www.miteco.gob.es/es/cambio-climatico/temas/impactos-vulnerabilidad-y-adaptacion/plan-nacional-adaptacion-cambio-climatico.html>
- Morita T and Pak C (2018) Legal readiness to attract climate finance: Towards a low-carbon Asia and the Pacific. *CCLR*, p.6
- Nachmany M, Abeysinghe A and Barakat S (2017) Climate change legislation in the least developing countries. *Trends in Climate Change Legislation [Averchenkova, A, Sam and M. Nachmany (eds.)]*. Cheltenham, UK: Edward Elgar Publishing. pp.59–82
- Nash S and Steurer R (2021) Climate change acts in Scotland, Austria, Denmark and Sweden: The role of discourse and deliberation. *Climate Policy* 21(9): 1120-1131.
- Net Zero Tracker (2023) *Net Zero Stocktake 2023*. <https://zerotracker.net/analysis/net-zero-stocktake-2023>
- Oh H, Hong I and Oh I (2021) South Korea's 2050 carbon neutrality policy. *East Asian Policy* 13(1): 33-46

- Oxford Net Zero (2023). What is Net Zero? Web page. <https://netzeroclimate.org/what-is-net-zero/>
- Prensa Presidencia (2019) Presidente Piñera encabeza el lanzamiento de la COP 25. Press release, 11 April. <https://prensa.presidencia.cl/discurso.aspx?id=94030>
- Robins N (2022) *The Just Transition: Shaping the delivery of the Inevitable Policy Response*. <https://www.unpri.org/download?ac=16124>
- Robins N and Rydge J (2019) *Why a just transition is crucial for effective climate action*. <https://www.unpri.org/download?ac=7092>
- Rogelj J (2023) Net zero targets in science and policy. *Environmental Research Letters* 18(2): 021003
- Rogelj, J, Fransen, T, den Elzen, M, Lamboll, RD, Schumer, C, Kuramochi, T, Hans, F, Mooldijk, S and Portugal-Pereira, J (2023) Credibility gap in net-zero climate targets leaves world at high risk. *Science* 380(6649): 1014-1016
- Rogelj, J, Geden, O, Cowie, A and Reisinger, A (2021) Net-zero emissions targets are vague: three ways to fix. *Nature* 591(7850): 365-368
- Sarra J (2020). *From ideas to action: governance paths to net zero*. Oxford: Oxford University Press
- Sloggy M, Suter J, Rad M, Manning D and Goemans C (2021) Changing opinions on a changing climate: the effects of natural disasters on public perceptions of climate change. *Climatic Change* 168(25). <https://doi.org/10.1007/s10584-021-03242-6>
- Smith S (2021) A case for transparent net-zero carbon targets. *Communications Earth & Environment* 2(1): 24
- Spence A, Poortinga W, Butler C, and Pidgeon N (2011) Perceptions of climate change and willingness to save energy related to flood experience. *Nature Climate Change*, 1(1)
- Sridhar A, Dubash N, Averchenkova A, Higham C, Rumble C and Gilder A (2022) *Climate Governance Functions: Towards Context-Specific Climate Laws*. London: Centre for Policy Research, Grantham Research Institute on Climate Change and the Environment and Centre for Climate Change Economics and Policy, London School of Economics and Political Science and Climate Legal
- Tan X, Kong LS, Gu B, Zeng A and Niu M (2022) Research on the carbon neutrality governance under a polycentric approach. *Advances in Climate Change Research* 13(2): 159-168
- Torney D (2017) If at first you don't succeed: the development of climate change legislation in Ireland. *Irish Political Studies* 32(2): 247-267.
- UNDP (2013) The Role of Legal Instruments to Support Green Low-Emission and Climate-Resilient Development. https://www.undp.org/sites/g/files/zskgke326/files/publications/LECRDS_Legal_Guide.pdf
- UNEP [United Nations Environment Programme] (2022) *Emissions Gap Report (EGR) 2022: The Closing Window – Climate crisis calls for rapid transformation of societies*. <https://www.unep.org/resources/emissions-gap-report-2022>
- UNEP (2020) Frank Bainimarama - policy leadership. Web page. <https://www.unep.org/championsofearth/laureates/2020/frank-bainimarama>
- UNFCCC [United Nations Framework Convention on Climate Change] (2023) *Technical dialogue of the first global stocktake. Synthesis report by the co-facilitators on the technical dialogue*. <https://unfccc.int/documents/631600>

- UK Independent Review of Net Zero (2023) *Mission Zero*.
<https://www.gov.uk/government/publications/review-of-net-zero>
- United Nations' High-Level Expert Group on the Net Zero Emissions Commitments of Non-State Entities (2023) *Integrity Matters: Net zero commitments by businesses, financial institutions, cities and regions*. <https://www.un.org/sites/un2.un.org/files/high-level-expert-group-update7.pdf>
- Van Coppenolle, H, Blondeel, M and Van de Graaf, T (2023) Reframing the climate debate: The origins and diffusion of net zero pledges. *Global Policy* 14(1): 48-60
- Virmani N, Agarwal S, Raut R, Paul S and Mahmood H (2022) Adopting net-zero in emerging economies. *Journal of Environmental Management* 321: 115978
- White E (2023) How China cornered the market for clean tech. *Financial Times*, 9 August.
<https://www.ft.com/content/6d2ed4d3-c6d3-4dbd-8566-3b0df9e9c5c6>
- World Bank (2020) *World Bank Reference Guide to Climate Change Framework Legislation. Equitable Growth, Finance and Institutions Insight - Governance*. Washington DC.
<http://hdl.handle.net/10986/34972>

Appendix 1. Methodological notes

Expert consultations on frameworks

We held two virtual closed-door roundtable discussions to consult with experts on the frameworks set out in this report. Participants included policy practitioners, campaigners and academics working in and around climate governance issues. The first roundtable was held with the Governance Group at the Grantham Research Institute on Climate Change and the Environment. This group includes experts from different departments and research centres at the London School of Economics and Political Science, including the Departments of Government, International Development, Geography, Law and the Grantham Research Institute. The second roundtable was held as part of a European Climate Foundation Climate Governance Hub meeting. We also presented our framework and solicited feedback at an academic conference, the European Consortium for Political Research (ECPR) General Conference in September 2023. Inputs from these discussions have been anonymised and incorporated into this report.

Semi-structured interviews in Fiji and Spain

The frameworks set out in this report were subsequently tested and improved through semi-structured expert interviews with climate policy practitioners in two countries selected as case studies: 11 interviewees in Fiji and 14 interviewees in Spain. The tables below show the variety of perspectives provided by the interviewees. Where an interviewee provided multiple perspectives due to their past and current professional background, those perspectives were counted separately.

The interviews were conducted by online video call during the period June 2023 to September 2023. The interviewees were selected to cover a broad range of stakeholders (see tables below) with knowledge of the policy process in the lead-up to their country's political and/or legal commitment to net zero, and its implementation. The interviews were conducted in English and were transcribed and analysed qualitatively through thematic content analysis with the assistance of NVivo software. Inputs from the interviews have been anonymised and incorporated into several sections of this report.

Spain

Perspective	No. of perspectives
Private sector	4
Public sector	2
Government advisor	2
NGO and NGO funders	3
Research and think tank	6

Fiji

Perspective	No. of perspectives
Public sector	2
Government advisor	2
Legislator	1
NGO	2
Research and think tank	3
International organisation	2

Selection of country case studies

To investigate the full net zero pathway (political commitment to net zero, legal commitment to net zero and implementation phase), we selected case studies from countries that have already integrated net zero targets into domestic legislation. We chose Fiji and Spain based on the ‘most different systems design’ approach, which identifies cases with differences on a wide range of explanatory variables (e.g. socioeconomic profile, political system, physical geography, emissions profile, climate vulnerability), but similarities on the dependent variable (i.e. commitment to net zero in national legislation). Choosing the ‘most different systems design’ approach enables us to test the applicability of our framework across a broader spectrum. This serves the report’s aim to develop a framework that is applicable across a wide range of countries. The enabling factors to net zero commitments and the challenges in net zero implementation can therefore be compared across two different contexts.

Review process and limitations

Our review of 26 net zero laws (listed in Appendix 4) was conducted based on the best public information available to the authors about each law. Assessing the extent to which a given climate governance function appears in the relevant law or policy is a subjective exercise. While we aim to make the review of each law as uniform as possible, determining the presence (or absence) of linkage to a governance function remains a subjective assessment. Furthermore, the authors acknowledge that each country’s legislative body adopts different approaches and recognise the possibility that limitations on the knowledge and experience in the legal practice of the countries reviewed may have led to some omissions or misinterpretations.

Appendix 2. Assessment criteria for linkage of net zero laws to the climate governance functions

The purpose of these criteria is to assess the linkages between countries' core climate governance functions and net zero laws. Our overarching research question was:

Does the law reference the core climate governance sub-functions (either directly through the law's provisions or via reference to existing legal provisions elsewhere)?

Criteria	Level of linkage between climate governance function (GF) and net zero law		
	Strong	Moderate	Weak
GF 1: Narrative and long-term objectives			
<ul style="list-style-type: none"> • Net zero/climate neutral (or equivalent) target • Timeline for net zero/climate neutral (or equivalent) objectives • Mechanism to periodically increase the level of ambition in emissions reductions (or at least a clause to prevent backsliding on previous targets) • Statement on the long-term benefits of the transition • Statement on the importance of justice/equality, a just transition and other principles for climate action 	Directly includes or expressly refers to an existing legal provision elsewhere on all elements (targets, timeline, mechanism and narrative)	Mentions the target and timeline but narrative or mechanism provision is unclear	No mention of target or timeline
GF 2: Strategy-setting with intermediate targets and review			
<ul style="list-style-type: none"> • Emission reduction targets for 2030 and/or other intermediate targets or mechanism to establish intermediate targets (e.g. carbon budgeting) • Obligation for the government to prepare decarbonisation strategies and plans (e.g. LTS/LEDS/NECP/2050 strategy) • Mandate for the government to develop key policy instruments (e.g. carbon pricing, information, regulation, public spending, and fiscal actions) • Mandate for a periodic review of targets, strategies and policies 	Directly includes or expressly refers to an existing legal provision elsewhere on most elements	Mandates or gives authority to the government to establish all or some of the key elements in the future	Mentions no intermediate targets or requirement to prepare strategies

	Level of linkage between climate governance function (GF) and net zero law		
Criteria	Strong	Moderate	Weak
GF 3: Independent knowledge, evidence and advice			
<ul style="list-style-type: none"> Provision to ensure that the government has access to independent expert advice Requirement for an expert advice to be sought in the processes of target setting, policy development, and evaluation of performance Requirement for the government to respond to the advice 	Directly includes or expressly refers to an existing legal provision elsewhere on most elements	Mandates or gives authority to the government to have access to independent expert advice, but does not specify when advice should be sought or does not require government to respond to the advice	No mention of any authority for the government to obtain expert advice
GF 4: Horizontal mainstreaming across sectors			
<ul style="list-style-type: none"> Mechanisms for translating targets into action across the sectors Provisions for shared accountability for emission targets for sectoral agencies or ministers Requirement for progress assessment by sector(s) 	Directly includes or expressly refers to an existing legal provision elsewhere on most elements	Mandates or gives authority to the government to establish all or some of the key elements in the future	No mention of subnational, regional, or local level involvement
GF 5: Vertical mainstreaming across subnational levels			
<ul style="list-style-type: none"> Delineation of a role for subnational governments in implementation (e.g. setting targets, preparing plans and reporting on implementation) Provisions for subnational governments with the means, resources and incentives to decarbonise (information, regulation, financing, etc.) 	Directly includes or expressly refers to an existing legal provision elsewhere on most elements	Mandates or gives authority to the government to establish all or one of the key elements in the future	No mention of subnational, regional or local level involvement
GF 6: Coordination			
<ul style="list-style-type: none"> Mechanism for coordination and delineation of responsibilities for coordination of the government's response to climate change Provision for subnational governments to be included in the coordination mechanism on climate change Reporting of coordination mechanism to a senior level of government (e.g. head of state or the cabinet) 	Directly includes or expressly refers to an existing legal provision elsewhere on most elements	Mandates or gives authority to the government to establish all or some of the key elements in the future	No mention of any responsibilities, authority or powers to coordinate response to climate change

	Level of linkage between climate governance function (GF) and net zero law		
Criteria	Strong	Moderate	Weak
GF 7: Inclusive stakeholder engagement			
<ul style="list-style-type: none"> Requirement for public participation and stakeholder engagement Requirement for public participation and stakeholder engagement on the formulation and implementation of key policies and plans, and the review of monitoring reports 	Directly includes or expressly refers to an existing legal provision elsewhere on most elements	Mandates or gives authority to the government to establish all or some of the key elements in the future, but with little detail on timing or scope	No mention of any mechanisms or requirements, or mention of public consultation
GF 8: Finance mobilisation, channelling and delivery			
<ul style="list-style-type: none"> Requirement for the government to address climate change risks, impacts or policy objectives in the preparation of its public financial management instruments (e.g. state budget, establishment of climate-specific fund, or provisions for budget tagging for climate expenses) Requirement for the publication and disclosure of information on public finances and climate Requirement for disclosure of climate risks for private sector 	Directly includes or expressly refers to an existing legal provision elsewhere on most elements	Mandates or gives authority to the government to establish all or some of the key elements in the future	No mention of any element, or mentions one element but with little detail
GF 9: Oversight and enforcement			
<ul style="list-style-type: none"> Requirement for government to collect information, and report periodically on progress in implementation to the public Provision for parliamentary oversight of executive actions (and/or inactions) on climate, including a requirement for executive to table progress reports to the legislative branch of government Provisions for regular independent assessments of progress on implementation of the law Provisions on the consequences for failing to meet obligations under the law or processes for correction 	Directly includes or expressly refers to an existing legal provision elsewhere on most elements	Mandates or gives authority to the government to establish all or some of the key elements in the future	Mention of preparation of progress reports by the government but no mention of oversight by the legislative body or the public

Notes: LTS = Long-Term Strategy; LEDS = Low Emission Development Strategy; NECP = National Energy and Climate Plan

The presence of a particular governance function, or its reference in a net zero law, does not automatically ensure credible implementation. An assessment of all relevant legislative and executive instruments that establish the climate governance infrastructure is needed to accurately understand the extent to which net zero targets are supported by the key climate governance functions – and whether all functions are sufficiently addressed in a given country. The above criteria would therefore need to be applied to all relevant policy and legal instruments.

Appendix 3. Linkages to climate governance functions in Fiji and Spain’s net zero laws: authors’ analysis and interviewees’ assessment

In the table below we set out our desk-based analysis of Fiji and Spain’s net zero laws in terms of the linkages between climate governance functions and the laws, alongside the dominant assessment made by our interviewees.

Governance function	FIJI – Level of linkage in the Climate Change Act 2021		SPAIN – Level of linkage in the Law 7/2021 on Climate Change and Energy Transition	
	Authors’ analysis	Interviewees’ assessment	Authors’ analysis	Interviewees’ assessment
1. Narrative and long-term objectives	Strong <ul style="list-style-type: none"> • Clear target for 2050, uses the narrative of a climate emergency • Recognition of the social implications of the net zero goal 	Strong <ul style="list-style-type: none"> • Strong and driven from a high level of government • Clear political will 	Strong <ul style="list-style-type: none"> • Clear target for 2050 and/or “the shortest possible time” • Just transition objectives 	Strong <ul style="list-style-type: none"> • Result of Teresa Ribera • Narrative changes depending on who you speak to in government • Narrative weaker in terms of informing the public on what needs to be done to achieve the net zero objective
2. Strategy-setting with intermediate targets and review	Strong <ul style="list-style-type: none"> • Requires the minister responsible for climate change to determine carbon budgets for 2030, 2035, 2040 and 2050 • Required to prepare National Climate Change Policy for 10-year periods • Deadlines for minister, with assistance of National Climate Change Coordination Committee to set 5-year carbon budgets 	50% strong; 50% moderate <ul style="list-style-type: none"> • On track but targets could be improved • More foresight desirable 	Strong <ul style="list-style-type: none"> • Quantified 2030 targets • Requirements for targets to be reviewed upwards • Targets to be reviewed every five years • Requirement to prepare NECP • Contains policy instruments such as a moratorium on domestic fossil fuel extraction and phase-out of fossil fuel subsidies 	Strong <ul style="list-style-type: none"> • A strategy exists, but how it will be implemented and the indicators or targets for review are not clear or transparent • Strong in the energy sector but not for all sectors • There is overall clarity on strategy but policies are not aligned with long-term strategy

	<ul style="list-style-type: none"> Minister granted powers to introduce and implement regulations, measures and actions across the economy (e.g. carbon pricing, fiscal incentives) 			
3. Independent knowledge, evidence and advice	<p>Weak</p> <ul style="list-style-type: none"> Minister has powers to appoint experts and establish an independent advisory board However, no requirement to establish any institution or coordination of experts 	<p>43% strong; 14% moderate; 43% weak</p> <ul style="list-style-type: none"> Needs to reduce reliance on international organisations and move towards more embedded local knowledge and capacity Shifting towards preparation of independent data 	<p>Strong</p> <ul style="list-style-type: none"> Establishes a Committee of Experts on Climate Change and Energy Transition Responsible for evaluating and making recommendations on climate policies Required to publish government responses 	<p>57% strong; 43% weak</p> <ul style="list-style-type: none"> Many interviewees cited the current delay with establishing the independent committee Weaker in terms of policy expertise
4. Horizontal mainstreaming across sectors	<p>Moderate</p> <ul style="list-style-type: none"> Requires each ministry to appoint a permanent secretary Focal point required to report to Director of Climate Change Division bi-annually on implementation Permanent secretaries for certain ministries required to estimate and compile emissions data to report Cross-references Environment Management Act in relation to impact assessments Transport sector required to implement 	<p>50% strong; 50% weak</p> <ul style="list-style-type: none"> Many sector working groups and technical committees now in place Some competition between ministries 	<p>Moderate</p> <ul style="list-style-type: none"> Contains several requirements to help integration of climate considerations across sectors, e.g. Section 16 specifies that the Ministry of Transport, Mobility and Urban Agenda, through State Ports and Port Authorities should implement certain policies, with the prior agreement of the autonomous regions Section 8 requires a plan for building sectors NECP requires sector objectives No express provision on shared accountability for 	<p>50% strong; 50% weak</p> <ul style="list-style-type: none"> Important change when the Ministry of Climate Change and Ministry of Environment were merged Not enough integration across governmental departments, although mainstreaming is better at city level

	<p>decarbonisation implementation strategy and review every five years</p> <ul style="list-style-type: none"> No express provision on shared accountability for emission targets for sectoral agencies 		<p>emission targets for sectoral agencies</p>	
<p>5. Vertical mainstreaming across subnational levels</p>	<p>Moderate</p> <ul style="list-style-type: none"> Required to consult local government when reviewing implementation of Act but no delineation of a role for subnational governments in implementation Committee’s mandate includes ensuring the mainstreaming of the consideration of and action on climate change by national and local governments, including the provincial administrations 	<p>Weak</p> <ul style="list-style-type: none"> Beginning to work on this but not yet achieved 	<p>Strong</p> <ul style="list-style-type: none"> Autonomous communities required to inform Climate Change Policies Coordination Commission of energy and climate plans Autonomous communities and local entities required to adopt measures to achieve zero-emissions vehicles by 2050 Municipalities with more than 50,000 inhabitants must adopt sustainable urban mobility plans before 2023 Reference to competencies of Autonomous communities throughout (“without prejudice to powers of Autonomous communities”) 	<p>Weak</p> <ul style="list-style-type: none"> Problems and disconnect between national and regional governments
<p>6. Coordination</p>	<p>Strong</p> <ul style="list-style-type: none"> Establishes National Climate Change Coordination Committee Committee is required to meet at least once a year and consists of permanent secretaries from each ministry, the 	<p>50% strong; 50% weak</p> <ul style="list-style-type: none"> New focal points mandated by the Act has improved coordination Climate change division has moved multiple times, which creates some challenges but also advantages 	<p>Strong</p> <ul style="list-style-type: none"> Reference to Climate Change Policies Coordination Commission (CCPCC), but no detail on mandate in the law itself Autonomous communities must report to the Climate Change Policies Coordination 	<p>Weak</p> <ul style="list-style-type: none"> Challenges due to being a multi-level state. National government can do more to coordinate with autonomous communities and incorporate them into discussions

	director of the division and any other members nominated by the permanent secretary responsible for climate change		Commission on the energy and climate plans as of 31 December 2021 <i>Note: The Commission's details are set out separately in Law 1/2005 and Royal Decree 1823/2022</i>	<ul style="list-style-type: none"> • Silos between ministries, although this depends on regions
7. Inclusive stakeholder engagement	<p>Strong</p> <ul style="list-style-type: none"> • Minister required to conduct public consultations “in a manner that encourages the participation of a diverse range of stakeholders, including the private sector, civil society organisations, youth organisations or representatives, and vulnerable and at-risk groups and communities” when developing the National Climate Change Policy <p><i>Note: Under the Constitution, this requirement for public participation is reinforced. Section 50(2) states that “reasonable opportunity for public participation in the development and review” is required when making laws. Section 72 further imposes a requirement on Parliament to facilitate public participation in legislative processes</i></p>	<p>29% strong; 57% moderate; 14% weak</p> <ul style="list-style-type: none"> • One interviewee expressed a view that civil society is seen by government to be a partner, invited to many workshops • Insufficient time given for consultation 	<p>Strong</p> <ul style="list-style-type: none"> • Establishes National Climate Change Citizen Assembly • Recommends establishing regional and municipal assemblies • Cross-references Law 27/2006, which embeds EU governance requirements 	<p>50% strong; 33% moderate; 17% weak</p> <ul style="list-style-type: none"> • Good engagement from citizens • Trust between business associations and government • Need to dedicate more time to coordinate consultation with regional governments

<p>8. Finance mobilisation, channelling and delivery</p>	<p>Strong</p> <ul style="list-style-type: none"> Minister of Finance required to provide information on economic implications of climate change in supplement to national budget All state entities required to include details of climate-relevant expenditure in budget submissions Requires the Minister, in consultation with the Reserve Bank, to prepare national climate finance strategies For companies and managed investment schemes who are required to prepare financial statements under the Companies Act, they must disclose material financial risks arising from climate change To fulfil the duty to exercise reasonable care and diligence under the Companies Act 2015, directors must consider climate change risks and opportunities 	<p>Weak</p> <ul style="list-style-type: none"> Positive about systems and organisation in place to handle the finance but there is still insufficient mobilisation One interviewee expressed that there was more channelling of finance before, when the climate change division sat within the Ministry of Economy 	<p>Strong</p> <ul style="list-style-type: none"> Percentage of the general state budget must contribute to the objectives established for climate change and the energy transition, in accordance with the Multiannual Financial Framework of the EU Ministry of Finance required to report on tax regime applicable to fossil fuel energy projects Bank of Spain, National Securities Market Commission and the General Directorate of Insurance and Pension Funds must prepare, every two years, a report on the degree of alignment with Paris Agreement and EU regulations based on future scenarios and financial risk 	<p>20% strong; 20% moderate; 60% weak</p> <ul style="list-style-type: none"> Strong mobilisation in renewable energy sector Insufficient channelling and delivery to experts at autonomous communities level
---	---	--	---	---

<p>9. Oversight and enforcement</p>	<p>Strong</p> <ul style="list-style-type: none"> • Findings from review of National Climate Change Policy, in alignment with NDC, must be presented to Parliament and published online • Parliament must either approve, amend or reject the proposed amendments • Although each carbon budget must be laid before Parliament within 10 sitting days after its determination, the Act does not require Parliament to approve such budgets • Act confirms that the Court may make set aside a decision made by a state entity, if it finds that climate change was relevant to such decision and that decision was not consistent with achieving the objectives of this Act 	<p>50% moderate; 50% weak</p> <ul style="list-style-type: none"> • Act outlines the key processes, but accountability mechanisms are still being put in place • Need for more legislative scrutiny • Act does not make clear which agency is responsible for enforcement 	<p>Strong</p> <ul style="list-style-type: none"> • 2050 Decarbonisation Strategy is reported to the Congress of Deputies and the Senate • NECP progress report must be submitted periodically to the Council of Ministers, no exact timing for reporting • Report prepared by Committee of Experts must be sent to Congress for debate 	<p>33% strong; 17% moderate; 50% weak</p> <ul style="list-style-type: none"> • Low accountability from private sector • MRV and enforcement lacking, specifically in relation to updated targets in National Energy and Climate Plan
--	---	--	--	---

Notes: Classification as 'strong', 'moderate' or 'weak' was given where at least two-thirds of interviewees considered the function to be so. The split in opinion is shown for all assessments with less than two-thirds majority. Where interviewees did not comment on the relevant governance framework, or due to time constraints during the interview were not shown the governance functions framework, they have been excluded from the percentage calculation.

Appendix 4. Laws with net zero targets

The following list represents all laws globally that contain a net zero target as of October 2023. Laws marked with an asterisk (*) do not constitute climate framework laws and were excluded from our review.

The Maldives Climate Emergency Act 9/2021, marked with two asterisks, was also excluded from our review due to restraints on language capabilities: we were not able to complete a comprehensive assessment using machine translation services (Google Translate or DeepL Translate) and were not able to source professional translation due to limited time and resources.

- Australia Climate Change Act (2022)
- Austria Federal Act on the Expansion of Energy from Renewable Sources (Renewable Energy Expansion Act) (2021)*
- Canada Net-Zero Emissions Accountability Act (2021)
- Chile Framework Law on Climate Change, Ley 21455 (2022)
- Colombia Law 2169 of 2021 promoting low-carbon development (2021)
- Denmark Climate Act (2020)
- European Climate Law, Regulation (EU) 2021/1119 establishing the framework for achieving climate neutrality and amending Regulations (EC) No 401/2009 and (EU) 2018/1999 (2021)
- Fiji Climate Change Act (2021)
- Finland Climate Act 423/2022 (2022)
- France Law No. 2019-1147 on Energy and the Climate and No. 2021-1104 on the fight on climate change and resilience (2019; 2021)
- Gabon Ordinance No. 019/2021 relating to climate change (2021)
- Germany Federal Climate Protection Act (2021)
- Greece Climate Law 4936/2022 (2022)
- Hungary Climate Protection Law (2020)
- Iceland Climate Law (2021)
- Ireland Climate Action and Low Carbon Development Act (2021)
- Japan Act on Promotion of Global Warming Countermeasures (2021)
- Liechtenstein Emissions Trading Act (2022)*
- Luxembourg Climate Law (2020)
- Maldives Climate Emergency Act 9/2021 (2021)**
- New Zealand Climate Change Response Act, as amended by the Climate Change Response (Zero Carbon) Amendment Act (2019)
- Nigeria Climate Change Act (2021)
- Portugal Law No 98/2021 Climate Framework Law (2021)
- Slovenia Resolution on Long-Term Climate Strategy until 2050 (2021)*
- South Korea Carbon Neutral Green Growth Framework Act (2021)
- Spain Law 7/2021 on climate change and energy transition (2021)
- Sweden Climate Act (2017)⁹
- Switzerland Federal Act on Climate Protection Goals, Innovation and Strengthening Energy Security (2022)
- Taiwan Climate Change Response Act (2023)
- United Kingdom Climate Change Act, as amended by the Climate Change Act 2008 (2050 Target Amendment) Order (2019)

⁹ The Swedish Parliament adopted its Climate Policy Framework (package) in 2017 which included the Climate Act, climate targets and a Climate Policy Council. Although the net zero target is not expressly included in the Act, since it was adopted by the legislature as part of the same policy package, we have included it in our analysis.