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Policy Paper | February 2021

Professionalizing Climate Policy via Legislation

Good Practices in Long-Term National
Climate Framework Laws

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**Beyond Carbon: Shaping the
Transition to a Low-Carbon Economy -
Perspectives from Israel and Germany**

Policy Paper Series by the Israel
Public Policy Institute (IPPI) and
Heinrich Böll Foundation Tel Aviv



In Cooperation with:



Embassy
of the Federal Republic of Germany
Tel Aviv

Professionalizing Climate Policy via Legislation

Good Practices in Long-Term National Climate Framework Laws

About the Project

This policy paper was written in the framework of the project “*Beyond Carbon: Shaping the Transition to a Low-Carbon Economy - Perspectives from Israel and Germany*” and presented in an experts' workshop in December 2020.

The project, which includes the publication of a series of policy analyses and execution of experts' workshops, sets out to promote dialog and exchange of knowledge between experts from Germany and Israel regarding the transition to a low emissions society.

The project was conceptualized and executed by the Israel Public Policy Institute (IPPI) and the Heinrich Böll Foundation Tel Aviv with generous support by the Climate Fund of the German Federal Foreign Office, represented by the German Embassy Tel Aviv.

This policy paper draws on the report “Climate Laws in Europe: Good Practices in Net-Zero Management,” commissioned by the European Climate Foundation (ECF) and written by Ecologic Institute (<https://europeanclimate.org/resources/climate-laws-recipes-to-help-governments-become-climate-neutral/>). The report was published in February 2020 and formed part of the European Climate Foundation's Net Zero 2050 series (<https://europeanclimate.org/net-zero-2050/>).

We would like to thank the Ecologic Institute and the European Climate Foundation (ECF) for their expertise, insights and excellent cooperation in the framework of this project.

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Please cite as follows:

Duwe, M. & Evans, N. (2021). *Professionalizing Climate Policy via Legislation: Good Practices in Long-Term National Climate Framework Laws*. Policy Paper Series “Shaping the Transition to a Low-Carbon Economy: Perspectives from Israel and Germany”. Israel Public Policy Institute and Heinrich Böll Foundation Tel Aviv



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Executive Summary

This paper presents an overview of over 20 good practice examples from a set of ten national climate laws in OECD countries (all also EU Member States), which have a long-term (mid-century) outlook. Its findings can serve as a guide for governments that are in the process of designing (or redesigning) their own climate governance systems, especially if they are considering or in the process of drafting dedicated framework legislation.

Key messages are:

- The climate crisis demands an effective governmental response. However, most administrations are not adequately equipped to deal with it.
- Professional and effective climate crisis management requires clear responsibilities and procedures - climate policy thus needs a dedicated functioning national framework.
- Establishing a national climate governance system in the form of a law makes the system stronger and signals sincerity. It can make governmental action more professional and more effective.
- Almost two thirds of OECD countries already have or are debating a national climate framework law. Any other country considering the adoption of such a climate law will be in good company.
- Of the climate laws analyzed, most include a set of core elements: targets, planning and policies, progress monitoring, institutional responsibility, external advice, and public participation. Where these are missing, the law cannot provide the function of helping the government to manage climate policy professionally.
- Many good practices are in place in the existing laws, which can serve as a resource and inspiration for other countries to adapt them to their own national context.
- Political support is a key underlying factor, which helps make the laws resilient to changes in government or other political or economic developments. This support can be garnered in the process of developing a law and in its implementation by involving a broad set of political actors and stakeholders. A national climate law can be both the outcome and the vehicle for generating and maintaining a national consensus on climate crisis management.
- Public participation does not feature explicitly in several of the laws analyzed, although societal support is an essential ingredient to successful socio-economic transition. Several countries are experimenting with broader involvement processes, such as citizen assemblies, to involve the public in a direct and meaningful way.

1. Introduction: Managing the Decarbonization Transformation

Charting a course towards net-zero emissions by mid-century is a mammoth task for the world's economies and represents an unprecedented management challenge for governments. Urgent policy changes in the short-term are required to curb greenhouse gas (GHG) emissions but must be designed and implemented with long-term direction in mind.

Framework climate laws have emerged as key governance tools for managing the transition towards climate neutrality.

The long-term vision outlined in the Paris Agreement (global temperature targets, and a trajectory towards greenhouse gas neutrality) relies on and underscores the need for transformative policy at a national level. To this end, framework climate laws have emerged as key governance tools for managing the transition towards climate neutrality and reconciling action in the short-term with emission reduction objectives for 2050 or beyond. Such laws establish an overarching framework for organizing action, assigning responsibilities and setting targets, and thus not only signal but operationalize the long-term resolve of national governments when it comes to climate action. In short: they can professionalize governmental climate action.

Framework laws are swiftly becoming the default approach, with new laws being adopted across Europe and elsewhere in the world.¹ Accordingly, growing attention in policy and academic circles has been given to the central role these legislative instruments can play in streamlining a country's climate governance system.²

While climate laws are as varied as their national contexts, many share a set of six common core design elements: (1) emission-reduction targets, (2) processes for strategic long-term planning and/or short-term policy-making, (3) progress monitoring, (4) institutional arrangements, (5) avenues for public participation, and (6) scientific advisory bodies. Using these shared elements to structure the analysis, this policy paper provides a comparative overview of the existing laws in ten European countries—Denmark, Finland, France, Germany, Hungary, Ireland, Netherlands, Spain, Sweden and the United Kingdom. With selected examples from the ten countries, the paper identifies good practices for each core element.³ These may serve as inspiration for lawmakers and interested stakeholders in other countries contemplating the adoption of a national framework climate law.

While climate laws are as varied as their national contexts, many share a set of six common core design elements.

2. Governance Context: Higher-Level Obligations

National climate governance systems do not exist in a vacuum. They are subject to pre-existing international commitments under the United Nations Framework Convention on Climate Change (UNFCCC) and its related treaties, which involve their own policy-making cycles and monitoring obligations. At the international level, the Paris Agreement, adopted in 2015, served as a major step towards aligning global effort by establishing a clear temperature goal for mid-century and the greenhouse gas (GHG) emissions trajectory needed to reach it.⁴ The Paris Agreement further defines

a cycle of action pledges in the form of so-called “nationally determined contributions” (NDC) in the short- to medium-term, combining this with a review process to track the sufficiency of global ambition. Apart from the regular NDC submissions and processes for monitoring of GHG emissions and biennial reporting on actions, the UN climate regime does not prescribe what domestic climate action should be or how it should be implemented.

EU Member States (from which the examples underlying this paper are selected) are subject to EU legislation. The EU climate governance system comprises numerous regulations and directives aimed at prompting ambitious GHG emission reduction efforts among the block’s 27 Member States, many of which go beyond what is stipulated by the Paris Agreement. Most importantly, the Governance Regulation requires EU countries to produce iterative National Energy and Climate Plans (NECPs) as well as long-term strategies aimed at transformational change.⁵

The EU Effort Sharing Regulation translates the EU-level emission reduction target into national quantitative targets for those economic sectors not already covered by the de facto target set centrally under the EU Emissions Trading System (ETS) and establishes a monitoring system to correct for insufficient national action. Together, these two regulations, coupled with the ETS compliance system, are designed to ensure that the EU, as a whole, delivers on its international promises. They establish procedures and a minimum set of climate governance standards for all EU Member States, but leave significant room for national decision-making.⁶

At the time of writing in December 2020, negotiations are underway on an additional overarching “EU climate law”⁷ to add additional substance to the existing governance framework, by enshrining a 2050 goal of climate neutrality for the EU and through a set of additional procedures.

Despite the numerous mandatory elements pertaining to action planning, and to a lesser extent, progress monitoring at both the EU and international levels, there is no clear blueprint or guideline for organizing climate action at a national level. At minimum, countries will have institutional arrangements in place and processes designed to deliver on higher-level commitments. A growing number of governments has taken this a step further, with a vast majority establishing more comprehensive governance frameworks through dedicated climate legislation.

3. Proliferation of Framework Climate Laws

While some OECD and European countries still organize their climate policy-making using a mixture of policy packages, governmental or ministerial planning documents as well as executive declarations or decrees that establish internal processes, a majority has turned to cohesive legal frameworks in the form of dedicated national climate laws. The Climate Change Act enacted in 2008 by the United Kingdom is often referred to as the first climate legislation to establish a concrete system to guide long-term transformation.⁸ At the time of its adoption, it was the first to directly incorporate a mid-century objective and implement regular policy-making processes to reach the 2050 goal as well as a dedicated expert council to underscore the entire governance system with scientific rigor and a higher degree of transparency.

Especially following the adoption of the Paris Agreement in 2015, there has been a significant increase in the number of framework climate laws in OECD countries (e.g. Germany, Hungary, Netherlands, Norway, Sweden, Colombia), of which most incorporate long-term GHG emission

reduction objectives. In several cases, existing laws have been revised post-Paris to include new and higher targets (e.g. Denmark, France, Japan, New Zealand, Mexico, South Korea, and United Kingdom). In Australia, where a national law was not politically feasible, individual provinces have established their own climate policy frameworks (New South Wales and Victoria). All told, almost two-thirds of OECD countries either already have a climate law or are considering one (see Table 1).

Numerous non-OECD countries across the globe have also adopted national climate framework legislation, such as Argentina, Kenya, Micronesia, Nepal, Peru as well as EU Member States, Bulgaria, Croatia and Malta. Notably, other non-OECD countries have enacted overarching climate frameworks albeit aimed primarily at adaptation, responding to climate impacts, and mitigating climate change vulnerability (e.g., Burkina Faso, Guatemala, Honduras, Mozambique, and Nicaragua).⁹

Table 1.

Climate framework laws in OECD countries (as of early 2021)¹⁰

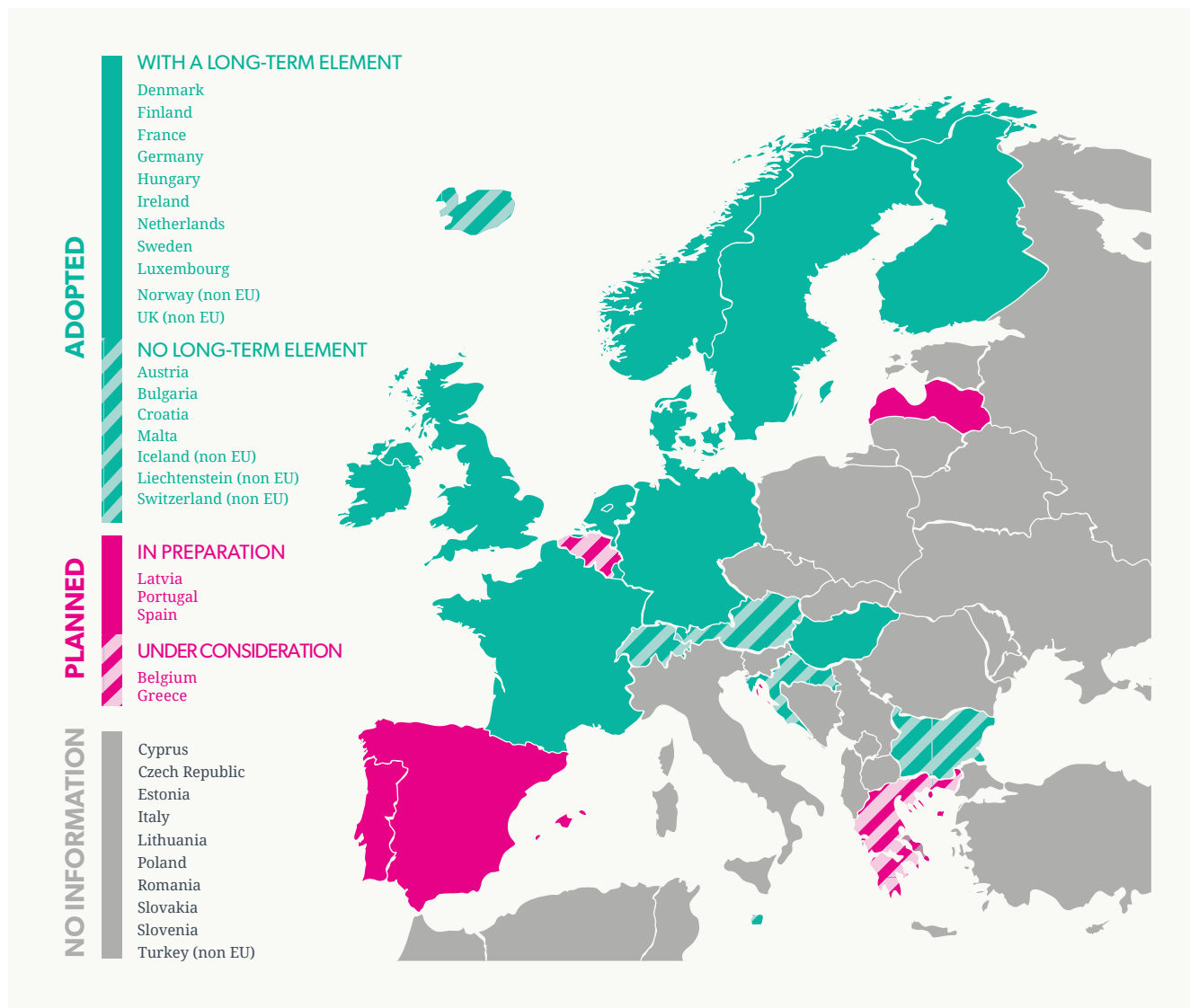
	Law adopted	Law in preparation	Law in consideration	No law
Asia				
	Japan Korea	Israel		Turkey
Europe				
	Austria Denmark Finland France Germany Hungary Iceland Ireland Netherlands Norway Sweden Switzerland United Kingdom Luxembourg	Latvia Portugal Spain	Belgium Greece	Czech Republic Estonia Italy Lithuania Poland Slovakia Slovenia
North America				
	Mexico Inside United States: California			Canada United States
Oceania				
	New Zealand Inside Australia: Victoria and New South Wales			Australia
South America				
	Colombia	Chile		

To date (start of 2021), 17 European countries have enacted some form of climate law, with a further five (possibly six)¹¹ countries either in the process of drafting a law or in the early stages of consideration. At the time of writing, four countries are planning major revisions to their existing frameworks (e.g., Austria, Ireland, Liechtenstein and Switzerland) and another six have already completed similar updates, often to account for an

increase in national emission reduction ambition (e.g. Denmark and the United Kingdom). Figure 1 provides a geographical overview of this legal landscape in Europe, distinguishing between existing and planned laws as well as between those with a long-term time horizon (i.e. 2050 or beyond) and those that focus on the immediate or medium term (i.e. 2030).

Figure 1.

Landscape of National Climate Framework Laws in Europe¹²



Distinguishing between framework laws that include a long-term or forward-looking element and those that do not is key. A handful of climate laws developed pre-Paris, e.g., in Iceland, Liechtenstein and Switzerland, involve shorter-term targets and are thus either aimed at incremental change or function to establish not only targets but also a range of policies, especially keystone climate mitigation instruments, such as the CO₂ levy in Switzerland.¹³ Still, signaling long-term commitment is crucial to galvanizing concrete and transformational policy across all sectors of the economy. Therefore, for the purposes of this policy paper, we focus primarily on countries in the “top tier” group. Any country that enacts such a forward-looking law is in good company.

Distinguishing between framework laws that include a long-term or forward-looking element and those that do not is key.

4. Why a Climate Law?

In theory, many of the functions of a climate framework law can be provided by a system that is not enshrined in legal form. Still, a majority of European governments (23 of 33) have opted to pass or pursue dedicated laws - why is this the case? What advantages does a climate law have over a less formally structured climate governance system?

First, at minimum, climate laws may legally enshrine EU and/or international obligations, often establishing processes to deliver on specific commitments, such as GHG-emission monitoring as part of the biennial reporting requirement of the UN. Many laws go much further by codifying short- and/or long-term emission reduction targets (e.g. for 2030 and 2050) and detailing

regular cycles of policy and planning to reach these. Enshrining climate policy processes and aims in a legal form makes it difficult to renege on promises; legislation can be a formidable barrier to policy rollback.

A law speaks loudly. Committing to a concrete timeline, including targets for 2050 or beyond, is a strong indicator of intent, signaling to government and private actors that a country means business when it comes to transformative climate action. Accordingly, when a law incorporates a figurehead long-term target, such as climate neutrality, this can lead to “climate mainstreaming” among the often conflicting priorities and governmental institutions that are associated with different sectors of the economy, further boosting the chances of success.

Finally, overarching climate laws can foster a professionalization of governmental structures by officially assigning duties and roles among existing public agencies while also creating new institutions, such as stakeholder dialogue platforms or scientific advisory bodies. An independent scientific council with a watchdog or monitoring function, in particular, can potentially enhance the overall accountability and transparency of a climate governance system, especially if coupled with dedicated processes for progress tracking at the national level.

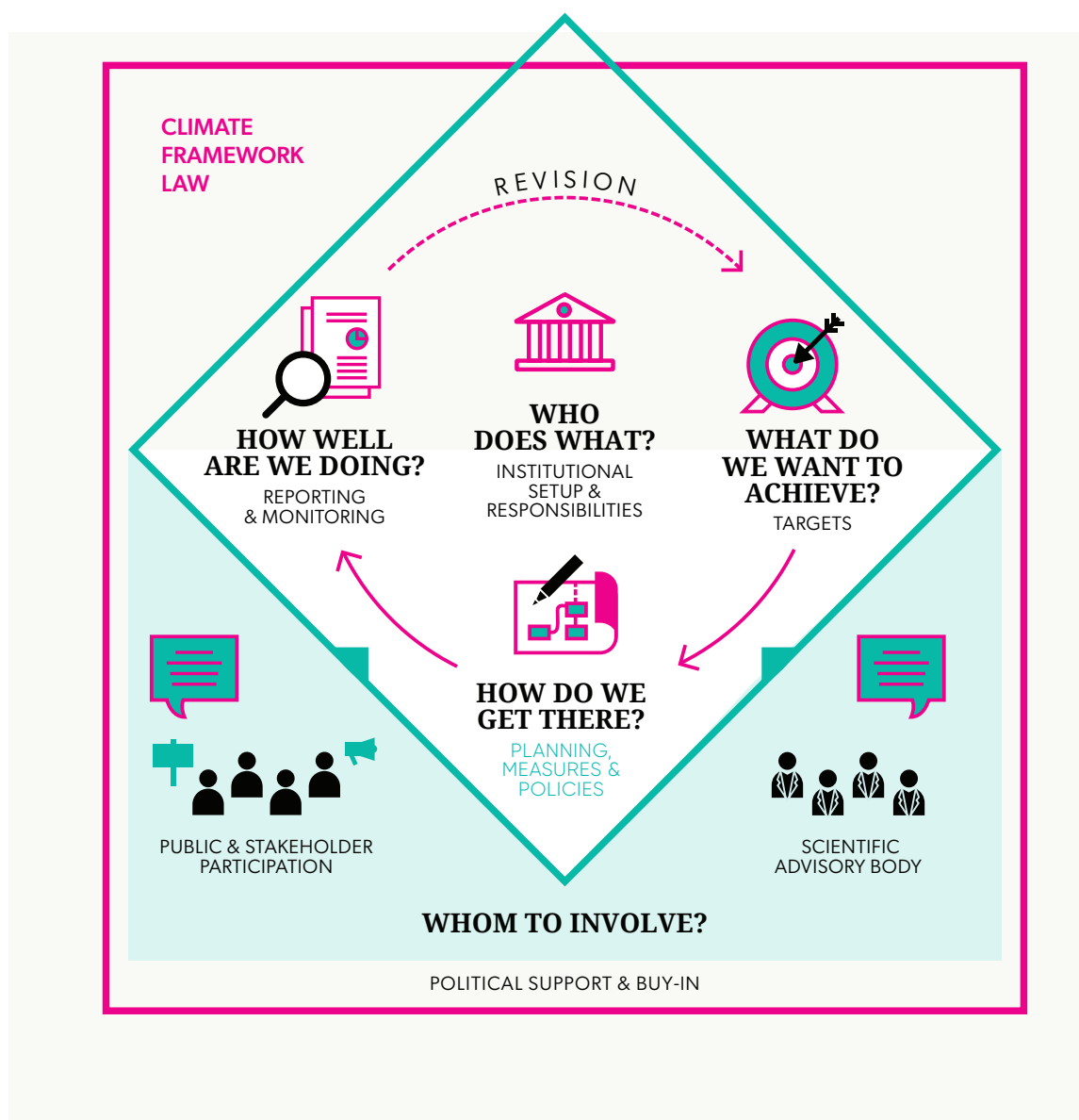
In short, given the urgency of the climate crisis and the scope and complexity of viable climate change solutions, governments need a strong framework to leverage and align institutional structures, provide forward-looking guidance and facilitate the involvement of a wide range of actors. “By government and for government” climate laws serve all these needs, equipping policy-makers with a “toolbox” of instruments to boost the functionality, accountability and longevity of a climate policy system.

5. The Toolbox: Core Elements of Climate Laws and Best Practices

Despite large differences in scope and content, all existing climate framework laws tend to build on a shared set of core elements or characteristics. It is useful to conceptualize these elements as providing answers to fundamental questions about the overarching purpose of a national climate governance system:

- **What do we want to achieve?** Most climate framework laws specify qualitative or quantitative climate protection targets for the short- and/or long-term. These legally enshrined objectives, usually in the form of GHG emission reduction goals, not only provide a clear direction but also serve as benchmarks to measure success.
- **How do we get there?** Once a national emissions target has been set, the work begins. In most cases, climate laws do not prescribe individual policy instruments but instead require the government to develop and stick to regular cycles of planning and policy-making. This may include economy-wide or sectoral long-term strategies (e.g. for 2050) as well as short- or medium-term plans with a package of policies and measures (e.g. for 2030).
- **Are we making progress?** Many frameworks incorporate a dedicated national progress monitoring and reporting system to continuously track the impact of policies on GHG emission projections (usually on an annual basis). The resulting report is often made publicly available via submission to parliament and may trigger additional action if existing measures are deemed insufficient for reaching the short- or long-term targets.
- **Who does what?** As a rule, climate framework laws are not aimed at private citizens or firms and instead establish rules for the government to monitor itself, i.e., demands on the executive branch by legislature. A key component here are the institutional arrangements, that is, how functions and roles are assigned within government, whether one agency or ministry has a lead role, how responsibilities are delegated to subordinate structures, and how responsible agencies are held accountable.
- **Whom to involve?** The effects of climate change and its solutions span all sectors of the economy. Due to the cross-cutting nature of climate governance, political buy-in and support from a wide range of stakeholders, both public and private, is key to the success of transformative climate protection policies. Climate laws operationalize transparency by establishing dedicated avenues for public and stakeholder participation. Furthermore, in an effort to bolster governmental accountability and ensure evidence-based policy-making, climate frameworks additionally solicit scientific advice and input through the creation of independent expert councils.

Despite large differences in scope and content, all existing climate framework laws tend to build on a shared set of core elements or characteristics. It is useful to conceptualize these elements as providing answers to fundamental questions about the overarching purpose of a national climate governance system.

Figure 2.Core elements of climate framework laws and their interactions¹⁴

Combined, the six core elements of climate laws - targets, policies and planning, progress monitoring, institutional arrangements, public and stakeholder participation and scientific advice - form the engine of a robust climate governance system.

As depicted in Figure 2, these design elements are closely connected in practice and as such, the absence of any one element can potentially undermine the entire governance system, or at the

very least diminish the organizational strength of the framework.

Over the next six sections, we investigate how these core design elements manifest in the existing climate framework laws of ten EU countries plus the United Kingdom (listed in Table 2). Notably, because these laws are tailored to fit ten different national circumstances, they come in all shapes and sizes, and none is universally exemplary

across all six core elements. Some of the legal documents are expansive and complicated, such as in France (30 pages with references to other relevant statutes) and the United Kingdom (100 pages of dense legal language), while others amount to fewer than 10 pages and are notable

for their brevity (e.g., Hungary, Netherlands and Sweden). To account for this diversity, in the following sections we highlight specific elements of each law to arrive at a set of best practices for each core element.

Table 2.

National climate laws (and draft laws) analyzed in this policy brief

Country	Title (original language)	Date of Adoption	Recent or Upcoming Revisions
Denmark	Climate Act (Lov om klima)	June 2020	Significant rewrite of the 2014 national climate law
Finland	National Climate Law (Kansallinen ilmastolaki)	June 2015	Revision pending: long-term target update, add interim targets and a program for LULUCF
France	Energy Transition Green Growth Act (Loi de transition énergétique pour la croissance verte)	August 2015	Revisions to target and institutional set-up adopted in September 2019
Germany	Federal Climate Protection Act (Bundes Klimaschutzgesetz)	December 2019	
Hungary	Law XLIV of 2020 on Climate Protection (2020. évi XLIV. törvény a klímavédelemről)	June 2020	
Ireland	Climate Action and Low Carbon Development Act	December 2015	Revision pending: Climate Action (Amendment) Bill is under debate
Netherlands	Climate Act (Klimaatwet)	July 2019	
Spain	Climate Change and Energy Transition Law (Ley de Cambio Climático y Transición Energética)	Pending (2021)	Draft was submitted to Parliament in May 2020
Sweden	Climate Law (Klimat Lag)	June 2017	Adopted as part of general climate policy approach (including targets)
United Kingdom	Climate Change Act	November 2008	Revision to 2050 target adopted in July 2019

The discussion that follows is based on this sample of ten of the existing climate laws in Europe, specifically those with a long-term dimension, and is a snapshot of a continuously evolving governance landscape.¹⁵ Indeed, climate framework laws are revised frequently to accommodate inter alia, more ambitious national targets or to enable restructuring of political institutions. Specifically, our assessment of the forthcoming Climate Change and Energy Transition Law in Spain is based on a public draft; and major amendments are pending in Finland and Ireland (in whose case we analyzed, for purposes of this paper, a draft amendment bill).¹⁶ Furthermore, for the most part we assess only the components of each climate law, and not the broader governance system. Relevant elements may be present in the overall governance system outside of the framework established by the law alone; for example, this is often the case when it comes to parliamentary involvement in climate policy-making or national GHG emission targets

5.1. Targets: Setting the Direction

The climate protection targets found in the ten framework laws are diverse, but in all cases serve as benchmarks to achieve and measure progress. Generally, in the form of GHG emission reduction goals, their strength in driving transformational change and actionable policy-making depends in large part on their nature - quantitative/qualitative, timeline, approach (single year/budget periods). Furthermore, the integration of interim targets, a dedicated review and adjustment mechanism, as well as sectoral goals other than GHG reduction, can further enhance the overarching aims of a climate policy framework.

As presented in Table 3, nearly all laws directly enshrine long-term quantitative GHG reduction targets (8 of 10). The vast majority of the countries examined in this study strive to go climate neutral. The Swedish emission reduction targets for 2030, 2040 and climate neutrality by 2045 are not mentioned explicitly in the framework law and instead were established as part of the country's broader "Climate Policy Framework" package adopted the same day. Still, Sweden, which has some of the most ambitious national climate aims in Europe, includes in its law a process by which the parliament determines targets. The law in Ireland only has a qualitative description as its 2050 target (the so-called "national transition objective"). The Irish amendment bill retains the aspirational dimension but now aims at a "climate resilient and climate neutral economy" - so has also taken up the net-zero emissions sentiment.

**Nearly all laws
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reduction targets.**

Table 3.**Interim and long-term targets found in (and outside) of the laws**

Country	Interim target(s)	Long-term targets(s)
Denmark	-70% by 2030	climate neutrality by 2050
Finland	<i>(carbon neutrality by 2035)</i>	-80% by 2050 <i>(now outdated)</i>
France	-40% by 2030 - and rolling carbon budgets	carbon neutrality and at least -83.3% ("a factor of six") by 2050
Germany	-55% by 2030	climate neutrality by 2050
Hungary	-40% by 2030	climate neutrality by 2050
Ireland	Proposed amendment: set via rolling carbon budgets	"low carbon, climate resilient and environmentally sustainable economy" by 2050 (qualitative) Proposed amendment: "The State shall pursue the transition to a climate resilient and climate neutral economy by the end of the year 2050".
Netherlands	-48% by 2030	-95% by 2050
Spain	at least -20% by 2030	climate neutrality by 2050
Sweden	<i>(-63% by 2030 or -55% without offsetting)</i> <i>(-75% by 2040 or - 73% without offsetting)</i>	<i>(climate neutrality by 2045)</i>
United Kingdom	set via rolling carbon budgets	-100% by 2050 (updated in 2019)

Note: (1) (Italics) indicate that the target is not mentioned in the law. (2) Unless otherwise stated all targets have a 1990 baseline.

As for **interim targets**, only six of the ten laws specifically mention quantitative targets for the medium-term. EU legislation already stipulates binding national reduction targets for 2030, not for the economy as a whole but for sectors not covered by the EU ETS.¹⁷ The law in Finland refers to EU requirements but does not enshrine a 2030 target. However, in 2019 the government announced a substantially more ambitious target of carbon neutrality by 2035, which will undoubtedly factor into upcoming revisions to the country's climate law. Such an upwards revision has already taken place in Denmark, France, and the United Kingdom; all three countries revised their framework laws to account for new climate neutrality targets. Earlier drafts of the Spanish law (from 2019) had also not included the climate neutrality goal, that is now in the text.

The frameworks in France, Germany and the United Kingdom all implement some form of a **budget-based approach** to mitigating GHG emissions, albeit with some differences between the systems. As an example, the United Kingdom's Climate Change Act formulates its emission target as a 100% reduction by 2050 compared to 1990 levels. To achieve this, the government implements five-year emission budgets (called "carbon budgets," even though they cover all GHGs), which pre-determine how many metric tons of GHG emission are permitted for each period. The budget limit is set 12 years in advance of the start of the five-year period. The French law utilizes a similar system, which is linked to the country's medium-term energy planning with budget limits set through a separate legislative process.

The German law employs a variant of the budget approach with annual sector-specific limits towards 2030, which the various governmental sectors are required to meet. The amendment bill for the Irish climate law would introduce a hybrid approach, applying the United Kingdom's model of five-year budget periods, but requiring sector-specific ranges for each.

The budget-based approach can be advantageous for numerous reasons, which can make it appealing in different formats and for different functions.

- A. It adds a quantitative dimension that can allow for more transparency overall, and can facilitate allocation of the budget (and respective reduction efforts)
- B. It operationalizes a specific objective with a clearly established and transparent pathway for achievement (as in the German case).
- C. It allows for the measurement of cumulative emissions, which is the determinant of overall climate impact. A budget-based climate impact measurement has not been a dominant consideration for the approaches used thus far. Properly employed, a budget can be set *ex ante* as a means of setting a limit on the maximum allowable emissions volume (not currently being used this way).
- D. It can provide more flexibility than individual target years, as it can allow measurement of cumulative compliance over a period (true for all approaches employed thus far), compensating for individual years over a certain target value.
- E. At least in the case of the United Kingdom, the budgets have proven resistant to political shocks and governmental upheaval, because of the way they are set in advance for a

future period (and thus outside of the current government's legislative period). Brexit had little effect on the Kingdom's adoption of the fifth carbon budget for 2028-2032, which happened a week after the referendum.

- F. A budget can be used to assign responsibility to specific actors. The sector-based system established in Germany is designed to enhance compliance by and collaboration between relevant ministries by breaking the national budget down by sector. Progress is reported per sector and gaps can trigger short-term action plans to spur additional reductions.

Other laws also include processes for setting further interim targets, without the use of a budget approach. The Danish law obliges the adoption of new targets every five years, for example, and the German law also includes a process for setting additional national targets.

The budget-based approach can be advantageous for numerous reasons, which can make it appealing in different formats and for different functions.

A number of climate laws (five of ten) incorporate some form of target review and revision, to adapt objectives previously set. Some frameworks leave the door open for the revision of targets to account for raised ambition at the EU or UN level (Finland and Germany) and/or based on developments in climate science and research (Spain). The climate law in France incorporates a general review clause that links any target correction to a five-year progress reporting cycle. In perhaps the most concrete terms, the Climate Change Act in the United Kingdom establishes a mechanism for target correction justified by scientific input. In practice, such a change occurred in 2019 when the 2050 target was adjusted from -80% to -100%

Good Practices: Targets

- Rolling emission budgets, set in advance (France, United Kingdom, proposed: Ireland)
- Sector-based emission budgets (Germany)
- Target revision (Germany, Finland, France, Spain, United Kingdom)
- No backsliding (Germany, Spain)

based on expert advice from the Climate Change Committee (UK CCC). Notably, two countries build in a backstop or “no backsliding” clause to ensure that targets cannot be revised downwards under any circumstance (i.e., Germany and Spain).

5.2. Planning and Policies for Concrete Action

The climate laws analyzed deal with strategic planning and the identification of specific policies and measures in different formats and in varying degrees of detail.

Strategic planning is mandated by Article 4.19 of the Paris Agreement, requesting Parties to prepare and submit long-term “low greenhouse gas emission development strategies.” As mentioned above, it also establishes the regular cycle of mandatory submission of national action plans (i.e., NDCs) which can include both targets and specific measures.

EU Member States have further specified these international commitments in the Governance Regulation (Article 15), which makes it mandatory to submit national long-term climate strategy (LTS) by January 1, 2020 and also sets out a five-year cycle for producing and updating so-called National

Energy and Climate Plans (NECPs) that need to contain specific policies that have been assessed as being sufficient to achieve their respective national targets on greenhouse gas emissions, renewable energy, etc. These NECPs garnered more political attention than LTSs, due to their near-term focus and greater level of detail on concrete policies and the direct link with energy policy.

Strategic Planning

To some extent this greater focus on policies and measures in climate policy planning for EU Member States seems to be echoed in the laws analyzed. Long-term planning does not feature as a separate process in several of the laws analyzed. Ireland, the Netherlands and the United Kingdom integrate the long-term direction into their respective policy planning documents (looking at specifics for the next 10-15 years). This may be changing for Ireland, which in the amendment bill is establishing a separate national long term climate action strategy. Denmark’s planning document is also for ten years only, however, the country has a particularly ambitious target for the next 10 years (-70%) which implies a more transformational perspective - and comes in combination with annual policy programs. The German climate law refers to the national long-term strategy and its review cycle, but a dedicated article, which had been present in a draft of the law, was deleted. For EU Member States, the obligation to produce and update national LTSs compensates for this shortfall, but laws without dedicated language miss out on the opportunity to give strategic planning a clear place in their overall climate governance system and assign responsibility for the process (e.g., in Hungary, the Netherlands, or Sweden). This can be problematic if the more near-term policy identification processes are not adequately oriented at the direction needed for the longer term. Future revisions of these laws should consider making up for this shortfall.

Good practice on long-term planning is the Finnish climate law that prominently establishes a climate planning system for different time horizons. In the French case, the national low-carbon strategy is also a central document and adopted by a separate government decree outside of the the climate law. The French climate law also mentions a range of additional sectoral strategies (e.g., on hydrogen) to be developed. In Spain, a 2050 strategy is explicitly mentioned, updated every five years. In addition, a Just Transition Strategy, mentioned in the draft law, has already been drawn up as a separate document. The Irish amendment bill introduces the innovation to extend the planning to the subnational level. It requires all Local Authorities to prepare individual Climate Action Plans which should include both mitigation and adaptation measures.

Good practice on long-term planning is the Finnish climate law that prominently establishes a climate planning system for different time horizons.

Policies and Measures

Almost all of the laws analyzed establish some form or regular process to adopt and review specific climate policies aimed at achieving the stated climate targets. The short Hungarian law does not include any such process, and in the French law, the process is less detailed. Most laws operate a regular updating cycle (four and five years, respectively) and cover periods of 10-15 years (in France and the United Kingdom they are connected to carbon budget periods). Even the brief Swedish law includes such a regular process.

The Spanish draft law uses the EU mandated NECP process for this purpose, which is also on a five-year cycle and covers a period of ten years. In the revised Danish law, the policy plan is an annual plan (combined with ten year plans); and such a constant updating cycle is also included in Ireland's

proposed amendment bill. Importantly, several climate laws feature dedicated policy mechanisms ("triggers") that require additional policy development based on gaps in reaching target achievement identified via progress monitoring (see section below). Such "needs based" updating is structurally included anyway in any annual cycle (e.g. Denmark) - and is otherwise explicitly included in the laws in Finland, France, Germany, and the Netherlands. In Sweden, the annual progress report must indicate if additional action is needed and when related decisions may be taken

Almost all of the laws analyzed establish some form or regular process to adopt and review specific climate policies aimed at achieving the stated climate targets.

Beyond these regular policy processes, countries differ significantly with regard to the inclusion of further detail. Some include specifications also with regard to planning and policies pertaining to adaptation to climate change. Furthermore, the French law includes a whole range of specific measures directly in the law (e.g. emissions standards for power plants). The Spanish draft law establishes future emissions standards for new vehicles. Most of the other laws do not include any specific measures, but focus on describing the governance framework only. Including policy detail in a framework climate law can create more tangible direct policy action, but also may create the risk of mixing the (overall more neutral) framework with potential political conflicts over the specific instrument. The one connection made in a number of climate laws is a link to annual governmental budgetary processes, which allows for an alignment of governmental spending and climate policy (France, Sweden, Germany, and Denmark).¹⁸ The French and Spanish laws also include obligations

for climate related reporting for the financial sector. Others (e.g. Germany) set climate related standards for public procurement.

Good Practices: Planning and Policies

- Long-term informs short term: clear hierarchy of strategies in Finland
- Regular processes: detailed policy plans every 4-5 years (EU, Finland, Germany, Ireland, Netherlands, Sweden, United Kingdom)
- Annual cycle for policy updates in Denmark (and possibly Ireland)
- Mainstreaming and budgetary alignment (Denmark, France, Spain, Sweden)

5.3. Monitoring Progress

Progress monitoring and reporting is a crucial element in the climate policy cycle. Existing EU and UN obligations require detailed tracking of GHG emissions inventories and EU Member States are obliged to include projected policy impacts every two years. While some degree of monitoring is thus guaranteed through international obligations, the key questions in a national context are: Is the data gathered used to track the sufficiency (or also efficiency) of domestic action? Who is responsible for reporting and how often? Does the monitoring system enhance transparency? To what extent does the progress monitoring inform future policy-making?

With the exception of the Hungarian climate law, all frameworks outline an annual system for national monitoring and reporting on climate

policy and its effects. As a rule, this includes the evolution of national GHG emissions as well as trends or forecasts for future emissions and, often, a regular assessment of progress made towards national reduction targets.

The content of and responsibilities for progress monitoring and reporting differ by country. In Germany, Denmark, Ireland and Sweden the main reporting obligation falls to the government, while in France, the Netherlands and Spain the central monitoring process is led by an external scientific advisory body. The Irish climate protection law obliges respective ministries to produce separate national and sectoral “mitigation transition statements,” which investigate the impact of measures taken within each sector and are delivered to parliament. Indeed, seven of the ten laws demand that progress and/or emission monitoring reports be submitted to parliament irrespective of whether these originate from the government itself or an independent advisory body. This makes reporting publicly accessible and greatly enhances the transparency of government climate action by creating an avenue for public discourse and stakeholder input.

With the exception of the Hungarian climate law, all frameworks outline an annual system for national monitoring and reporting on climate policy and its effects.

The framework laws in Denmark, Finland, Germany and the Netherlands specifically stipulate the implementation of additional policies and measures in the case of progress gaps that arise from monitoring. Such an action trigger mechanism is the crucial final stage in the policy learning cycle, without which there is no built-in way to ensure that policies stay on track.

The annual climate policy cycle in Denmark is especially comprehensive, and includes historical data, forward projection and, as stated above, a dedicated monitoring role for the expert Council on Climate Change, which could result in further policy-development through a trigger mechanism involving parliament.

Good practices: Monitoring progress

- Sector-specific monitoring (Ireland)
- Report submitted to parliament (Denmark, Finland, France, Germany, Spain, Sweden, United Kingdom)
- Action trigger (Denmark, Finland, Germany, Netherlands)

5.4. Institutional Arrangements: Professionalization of Governmental Structures

As their names suggest, one main feature of climate framework laws is outlining a framework for governmental organization for climate action. Increased specialization and dedicated roles lead to a professionalization of governance structures, whereby different governmental institutions each deliver a separate piece of emission reductions or fulfill a crucial monitoring function. Still, the ten climate laws vary significantly in how they go about assigning responsibilities to relevant ministries and structuring actions among other agencies, institutions, and in some cases, parliament.

At one end of the spectrum, the laws in France, Hungary and Sweden indicate only vaguely who is responsible for climate policy design

and implementation, referring solely to “the government” when it comes to drawing up climate action plans or reports and implementing measures. The laws in certain other countries are somewhat more specific, formally designating a lead ministry or department in charge of climate policy (e.g., Netherlands, Spain, and United Kingdom). In some cases, short-term action and long-term strategic planning are split between two different ministries (e.g. Finland and Germany), and laws also delegate specific monitoring or information gathering tasks to peripheral but relevant governmental agencies, such as the German Environmental Agency, Statistics Finland or the Danish Energy Agency.

The ten climate laws vary significantly in how they go about assigning responsibilities to relevant ministries.

Three good practice examples not only delegate among ministries and institutions but are designed to deliver some degree of cooperation among them. In the Finnish climate law, coordination between governmental institutions is stated as a fundamental purpose. Article 15, specifically, details a structure by which the responsibility to act on climate change is spread across multiple ministries covering different sectors of the economy. According to the Finnish climate law, each ministry must produce “sectoral input” for each long- and medium-term national climate plan as well as provide data input for the annual reporting cycle. The Irish law is similar, outlining detailed guidance for each relevant ministry’s sectoral mitigation plan, which is then combined by the Ministry for the Environment, Community and Local Government into the national climate action plan.

By far the most elaborate mechanism for ministerial collaboration among the laws surveyed, the German climate protection law requires

ministries to propose policy measures to include in the government's overarching climate programs. These must be shown to be in line with the annual budget limit for each sector in an impact assessment, the assumptions and underlying data of which is then verified by the Expert Council. Individual ministries are responsible for policy implementation, and therefore, for any deviations from the budget limit that may be highlighted by sectoral progress monitoring.

According to the Finnish climate law, each ministry must produce "sectoral input" for each long-and medium-term national climate plan.

A special mention is owed to the draft Spanish law, which includes an additional Article giving powers to the respective Ministry to organize relevant information (including demanding it from other governmental institutions) related to Spain's obligations to report on its actions and progress under EU and international law. The obligation on other governmental actors includes delivery of data in requested formats and structure- facilitating the delivery of the growing requirements for Spain as a whole.

The ten climate laws involve the legislative branch of government in different capacities; only four outline a more active role for parliament. Most laws see parliament as a passive actor, only "receiving" plans and climate reporting, sometimes specifically for debate (e.g., Denmark). In France, however, the parliament is allowed to request analyses or evaluations from the High Council for Climate, France's independent advisory body. Parliament is granted an even more active role in Germany, Sweden and the United Kingdom. In Germany, the Bundestag is called on to approve future emission budgets (as well as changes to

existing budgets) and debates the climate reporting that originates from numerous sources, including both the government and the Expert Council. Like in France, the Bundestag can also call on the advisory body to produce ad hoc reports on topics of interest. The Swedish law gives the Riksdag responsibility for setting the long-term climate goal as well as receiving the climate reports attached to the annual budget proposal. The carbon budget system established under the Climate Change Act in the United Kingdom is implemented via "secondary legislation," which means that each budget must be approved by a simple majority in both Houses of the British Parliament following the recommendation of the UK CCC. In Ireland, the draft amendment bill would strengthen the role of parliament by establishing and giving powers to a dedicated committee as part of the carbon budget setting process - and obliging the government to report on progress to it every year.

Important to note is that there are also institutional structures that exist either formally or informally but are not mentioned explicitly in the climate law; the parliament's role in climate policy-making is one example. Another example is numerous countries that have internal interministerial coordination mechanisms or working groups in place that do not feature in their respective climate laws but still play a central role in the climate governance system (e.g. Finland, France, and Hungary among others). As for parliament's role, the Dutch law, for instance, does not mention the Houses of States General apart from its receiving and debating an annual climate and energy forecast report, but historically the parliament has played a more active role, especially in regard to the development of the National Climate Agreement in 2019 between the various economic sectors.¹⁹ Both Chambers of the Dutch States General must also be allowed to weigh in regarding changes to climate planning.

Good Practices: Institutional Arrangements

- Sectoral coordination (Finland, Germany, Ireland)
- Active role for parliament (France, Germany, Sweden, United Kingdom; future: Ireland)

5.5. Independent, Scientific Advice

Nine of the ten climate laws analyzed establish some form of independent advisory body for scientific input on climate policy (with Hungary being the exception). The importance of such expert councils cannot be overstated as they often enhance the scientific basis and accountability of climate policy-making, acting as a sounding board for policy-makers, providing evidence-based policy recommendation and functioning as independent monitors of government action (or inaction) on climate.

Crucially, the independent bodies established in each case are composed of representatives of the scientific and research community who are active in fields relevant to climate policy, such as climate science, economics, behavioral science and others. As such, they are not stakeholder engagement bodies, even though in some cases they are called on to encourage public debate surrounding domestic climate action (Denmark, Sweden and the United Kingdom to a lesser extent).

Across the board, where an advisory body is established, it is tasked with providing advice and recommendations on policy formulation. This can take the form of ad hoc or exploratory assessments of mitigation options and specific technologies (e.g. the Finnish Climate Panel) or a more concrete

and targeted task. The CCC in the United Kingdom is tasked specifically with recommending each emission budget, which the government must take into account or otherwise issues a public comment as to why it wishes to deviate from the committee's proposal. Historically, this has yet to occur.²⁰ The draft amendment to the Irish Climate Act would also give this task to the respective Advisory Council. In other cases, the independent council is tasked with commenting on government climate plans and providing recommendations for future options and potential modifications (e.g. Danish Council on Climate Change).

Nine of the ten climate laws analyzed establish some form of independent advisory body for scientific input on climate policy.

In eight cases, these bodies have a monitoring function to enhance the accountability of governmental action through independent oversight. This watchdog role generally takes the form of an obligation on the respective body to present a report (annual or periodic) on the state of the country's climate action with a view on target achievement. The watchdog function is perhaps most pronounced in the framework laws of Denmark, France and the United Kingdom because in each case the government is legally obliged to respond to the independent councils' input, whether policy recommendations or progress reporting, in some form.²¹ Indeed, the independent climate councils in these three countries appear to have particularly strong roles in their respective climate governance systems overall, in regard to their concrete and frequent input into policy-making and capacities (e.g., large secretariats or supporting infrastructures and annual budgets). The reporting obligations of the Danish independent Council on Climate Change, specifically, can trigger a discussion on the floor of parliament and consequently additional action

to fill in policy gaps. Although not enshrined as a formal mechanism, feedback between government and a dedicated climate advisory body also occurs in practice in Finland, Sweden and Germany due to regularly scheduled exchange between council members and public officials.

Good Practices: Independent, Scientific Advice

- Concrete policy input (United Kingdom)
- “Watchdog” mandate (Denmark, France, Ireland, Netherlands, Spain, Sweden, United Kingdom)
- Government is legally required to respond to or consider recommendations (Denmark, France, United Kingdom)

5.6. Stakeholder Engagement

Member countries to the Aarhus Convention²² (which includes all EU Member States) are obligated to minimum standards on transparency (access to information and documents) and consultation. Accordingly, many countries have existing processes for consulting stakeholders and the public on legislative proposals that would apply to climate policy. Some also have dedicated stakeholder consultation bodies specifically on climate policy. Nevertheless, considering the importance of public support for transformative climate policy, the climate laws analyzed include surprisingly little detail on how public outreach and stakeholder participation is meant to take place. In this area, most laws could improve significantly.

Only half of the laws analyzed contain more specific language on public participation opportunities. Planning documents have to be open for comment in Finland. Public consultations on policy programs are required in Germany. In France, such consultations are mandatory for both strategies and policy plans. The 2020 draft Spanish law includes a dedicated article (35) on public participation that lists several documents to be made available to the public for consultation and promises a dedicated website for easy access.

Only half of the laws analyzed contain more specific language on public participation opportunities.

Most of the laws analyzed make reference to public participation but do not spell out specific processes or occasions. This is not necessarily a reflection of the status quo: there are existing national climate policy stakeholder fora in Spain and Germany, for example, but these are not mentioned in the climate laws. The Dutch climate law has a separate section on “participation” but does not describe specific procedures.

The revised climate law in Denmark is a notable exception as it creates a new dedicated forum for public engagement. It mandates the Danish Climate Council to create a “Climate Dialogue Forum” with a broad range of stakeholders to consult on main outputs prepared by the Council. The process is currently in early stages of implementation. Similarly, the laws in Sweden and the UK task their respective advisory bodies with public engagement, but do not create dedicated bodies for this purpose. The brief Hungarian climate law does not mention public involvement.

The opportunities for inputs from stakeholders mentioned in the laws analyzed are important for transparent climate governance, but they do not constitute comprehensive public engagement processes. Several countries have experimented with so-called citizen assemblies in the last two years, notably Ireland, France and the UK (which had to finalize its process virtually due to the COVID-19 pandemic).²³ A 2016 process in Germany pursued a similar initiative (for the drafting of the national 2050 climate strategy). Although it has yet to be done, such citizen assemblies or similar continuous engagement processes could be formally established by national climate laws.²⁴

In the EU, the 2018 Governance Regulation (on climate and energy policy) requires that all Member States establish so-called “multi-level climate and energy dialogues” (Article 11) to discuss national policy plans and long-term strategies, but there are no further specifics to define these. Arguably, this could be interpreted as a call for a steadier and systematic stakeholder consultation processes. Governments could establish these through their national framework laws - as they have done for scientific advisory bodies (as outlined above).

Good practices: Public/Stakeholder Engagement

- Dedicated article on public participation, comprehensive access (Spain)
- Dedicated stakeholder consultation forum created by the law (Denmark)
- Citizen Assemblies organized (outside of the climate law) (Ireland, France, UK)

6. Broader Context: Political Support is Crucial

The arguments in favor of adopting a robust climate governance system in legal form are strong. It is certainly true that a legal form also provides an additional obstacle to a political roll-back, as they can be harder to overturn than non-legal systems (see, for example, the Affordable Care Act in the United States under the Trump Administration). However, laws can and often must be changed - and to the extent that changing governments are a democratic expression of a shift in the electorate's will, new administrations have a mandate to make such changes. There are specific incidences of major reversals in climate policy (notably, to stay with the US example, the US withdrawal from the Paris Agreement by President Donald Trump). For a national climate framework law to weather such political shifts, broad political support for its underlying concept is essential. In most of the countries whose climate laws have been analyzed for this policy brief, this political support was generated through dedicated processes or through prolonged societal and political debates on the need for effective climate policy.

In the UK, a large-scale public advocacy campaign (asking citizens to engage their respective parliamentarian, for example) laid the ground for broad support by the main political parties at the time. In Ireland and Germany, individual political parties had long championed the notion of a climate law before it finally came to pass. Civil society protests made a clear difference in Germany, with growing public protests around the Fridays For Future movement throughout the year 2019. In France, the law underwent significant parliamentary debate and was refined significantly relative to the government's initial proposal in the process - creating buy-in to the final product (a similar process is underway in Spain at the time of writing). A broad stakeholder process in Germany

had led to the adoption of sectoral targets in the national long-term strategy. These targets now represent a key feature of the national law, and attempts to dilute them failed, as they had been previously agreed upon. In Sweden, a multi-party expert commission was set up to explore the pros and cons of a climate law. Another dedicated effort at getting many parties on board was made in Denmark in late 2019, when the newly elected government, with higher climate policy ambition, sat down with parties outside of the ruling coalition to forge a broad agreement on a new climate law to replace the existing one from 2014. Denmark's minister in charge proudly proclaimed on Twitter on December 6, 2019, “*We have an agreement!! #climatelaw,*” accompanied by a selfie with representatives of numerous political parties that had supported the bill²⁵ - thus publicly committing them to key elements of the new law.

Beyond the important process in advance of a law getting passed, the buy-in to the governance system and its objectives also can be maintained with the help of routines established by the law itself. Through establishing opportunities for public participation, stake-holder engagement and parliamentary debate, a climate law can create processes through which political support is regenerated regularly and upheld over time.

Good Practices: Political Support

- Non-partisan (or multi-party) development process to recruit support for the law beyond the ruling political parties (Sweden, Denmark)
- Civil society involvement and parliamentary debate can generate support in advance of and after adoption of a climate law (United Kingdom, Germany, Ireland, France)

7. Conclusions

Climate framework laws are swiftly becoming the default means of establishing a system for governmental management of climate policy. The examples analyzed in this paper show individual nuances and tailor-made innovations for their respective national contexts, but also universal similarities. That is, despite their diversity in length, format, detail and design choices, a set of core elements is clearly visible, even if some are less pronounced than others (e.g., strategic planning and public participation). Good practice examples exist for all of them, creating a rich basket of variants from which to choose from when designing a climate law adaptable to a wide range of national contexts.

Some elements are essential and omnipresent, such as quantitative targets, regular policy planning processes and the establishment of independent advisory councils to monitor and inform governmental action (even if the particularly strong mandate and capacity given to the UK Committee on Climate Change as the first of its kind have yet to be matched). Some innovations stand out as being worthy of further replication, such as the sectoral budget allocations in Germany (forcing every ministry to contribute), the clear strategy hierarchy in the Finnish law and the annual cycles being implemented in Denmark. Also, the integration with public finance and governmental budgets could prove effective if adopted more widely.

Climate framework laws are swiftly becoming the default means of establishing a system for governmental management of climate policy.

There is, however, room for improvement. None of the examples of using a budget approach actually set a maximum volume until 2050. Furthermore, intragovernmental coordination

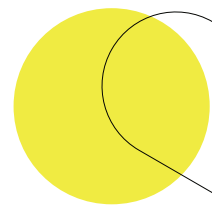
has been much less detailed than anticipated, considering the importance of assigning responsibilities - and elevating climate policy to a higher level inside the administration.

And, sadly, not every national climate law can fulfil the function of creating better processes and greater accountability. The Hungarian climate law is rather empty of content and procedures and does not include a good practice example other than a 2050 target. In comparison to the other laws analyzed, it serves as a bad practice model of a nominal climate law that cannot help with the governance challenge, as it lacks substance and provides no guiding framework.

At the time of writing, negotiations are ongoing on the establishment of a dedicated climate law for the European Union as a whole, which would make the goal of climate neutrality by 2050 binding on the Union. This is arguably further proof of the growing recognition that climate policy, aiming at long-term emission reductions, requires dedicated frameworks enshrined in law.

To put climate governance systems established in this way to successful use **requires broad support from both political parties and other stakeholders**. The experience of many existing laws shows that it is possible to invest in a solid basis for this support to make the laws resilient to disruptive influences. The ongoing experiments with citizen assemblies and related public participation processes could provide additional input to the further refinement of future climate laws, making public engagement a more integral feature of modern, professional climate crisis management.

To put climate governance systems established in this way to successful use requires broad support from both political parties and other stakeholders.



Endnotes

- ¹ Duwe, M. & Bodle, R. (2020). "Paris Compatible" Climate Change Acts? National Framework Legislation in an International World. In: Major National Climate Change Acts: Their Emergence, Form and Nature. London: Hart Publishing.
- ² For a range of recent work on the topic see: Duwe, M. & Evans, N. (2020). Climate laws in Europe: Good Practices in Net-Zero Management. Brussels: European Climate Foundation, Berlin: Ecologic Institute; Fankhauser, S., Averchenkova, A. & Finnegan, J. (2018). 10 years of the UK Climate Change Act. London: Grantham Research Institute on Climate Change and the Environment; Nash, S. L., & Steurer, R. (2019). Taking Stock of Climate Change Acts in Europe: Living Policy Processes or Symbolic Gestures? Climate Policy 19(8), pp. 1052-1065; Rüdinger, A., Voss-Stemping, J., Sartor, O., Duwe, M., Averchenkova, A. (2018). Towards Paris-Compatible Climate Governance Frameworks: An Overview of Findings from Recent Research into 2050 Climate Laws and Strategies. Paris: IDDRI.
- ³ This policy brief draws heavily from a previous report by the authors entitled, "Climate Laws in Europe: Good Practices in Net- Zero Management," published in February 2020 and incorporates updates to the situation as of mid-November 2020.
- ⁴ UNFCCC. (2015). Paris Agreement, Art. 2, 4.
- ⁵ European Parliament and Council. (2018a). Regulation (EU) 2018/1999 of the European Parliament and of the Council of 11 December 2018 on the Governance of the Energy Union and Climate Action, Amending Regulations (EC) No 663/2009 and (EC) No 715/2009 of the European Parliament and of the Council, Directives 94/22/EC, 98/70/EC, 2009/31/EC, 2009/73/EC, 2010/31/EU, 2012/27/EU and 2013/30/EU of the European Parliament and of the Council, Council Directives 2009/119/EC and (EU) 2015/652 and Repealing Regulation (EU) No 525/2013 of the European Parliament and of the Council. Text with EEA relevance. PE/55/2018/REV/1, Brussels.
- ⁶ The intergovernmental Organization for Cooperation and Development, a block of 37 countries, is an active participant in UN negotiations but does not prescribe climate action or outline its own binding targets. The OECD's Climate Change Expert Group (CCXG) publishes regular working papers and policy recommendations aimed at helping member countries achieve their international commitments and align their NDCs. The organization itself also promotes global green finance and investment, especially with regard to international taxation and corporate policy—both historically key pillars of the OECD's purpose—producing concrete guidance for multinational enterprises pertaining to responsible business conduct and climate change. For an overview of OECD work in regard to climate action see: OECD Environment Directorate. (2019). Work in Support of Climate Action. <http://www.oecd.org/env/cc/OECD-work-in-support-of-climate-action.pdf> (accessed December 3, 2020), <http://mneguidelines.oecd.org/rbc-and-climate-change.htm> (accessed December 3, 2020).
- ⁷ European Commission (2020) Proposal for a regulation of the European parliament and of the Council establishing the framework for achieving climate neutrality and amending Regulation (EU) 2018/1999 (European Climate Law). COM/2020/80 final
- ⁸ For a closer look at the British Climate Change Act see: Averchenkova, A., Fankhauser, S., Finnegan, J. J. (2020). The Impact of Strategic Climate Legislation: Evidence from Expert Interviews on the UK Climate Change Act, Climate Policy. DOI: 10.1080/14693062.2020.1819190; Fankhauser, S., Averchenkova, A. & Finnegan, J., 2018: "10 years of the UK Climate Change Act," London: Grantham Research Institute on Climate Change and the Environment.

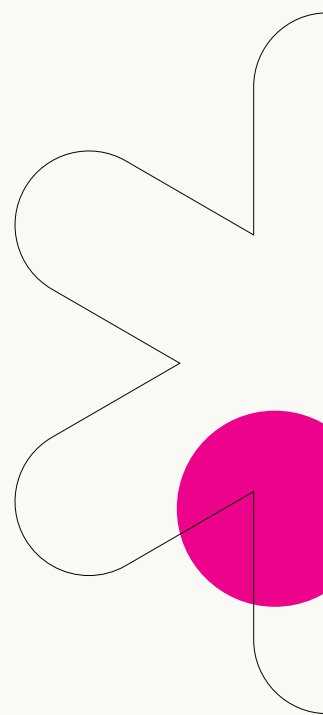
- ⁹ We identified climate framework laws with a clear mitigation focus in a total of 16 non-OECD countries across multiple continents: Africa (Benin, Kenya); Asia (Nepal, Pakistan, Philippines, Taiwan); Europe (Bulgaria, Croatia, Liechtenstein, Malta); Oceania (Micronesia, Papua New Guinea); South America (Argentina, Brazil, Paraguay, Peru). For a full and comprehensive outlook on climate legislation and policy adoption globally see the Climate Change Laws Database run by the Grantham Research Institute: <https://climate-laws.org> (accessed 03 December 2020).
- ¹⁰ Source: own research. Geographic association to a region is based on the Standard country or area codes for statistical use (M49) of the United Nations Statistics Division (found at <https://unstats.un.org/unsd/methodology/m49/>, accessed December 04, 2020).
- ¹¹ Belgium is a complicated case, largely due to its federal structure. Prior to the federal elections in May 2019, the debate over the latest attempt to introduce a national climate law was suspended. Even though two of the country's three regions have their own existing or planned climate framework legislation (Walloon and Brussels), it is not clear whether the discussion will be reopened at a national level. For an overview see: Cycle de Séminaires Académiques. (2018). *Gouvernance Belge en Matière de Climat: Rapport de Synthèse*. Brussels: Université Saint-Louis, (accessed October 6, 2020): https://climat.be/doc/KlimGov_Synth_FR.pdf
- ¹² Source: adapted from Duwe, M. & Evans, N. (2020). *Climate Laws in Europe: Good Practices in Net-Zero Management*. Brussels: European Climate Foundation, Berlin: Ecologic Institute, visualization by Ecologic Institute, design by Noble Studio / European Climate Foundation.
- ¹³ The original names of these laws are: Bundesgesetz vom 23. Dezember 2011 über die Reduktion der CO₂-Emissionen (CO₂-Gesetz) 641.71 (2013 revision) (Switzerland); Lög um loftslagsmál (2012 nr. 70 29. júní) (Iceland); Gesetz vom 6. September 2013 über die Reduktion der CO₂-Emissionen (CO₂-Gesetz) (Liechtenstein).
- ¹⁴ Source: adapted from Duwe, M. & Evans, N. (2020). *Climate Laws in Europe: Good Practices in Net-Zero Management*. Brussels: European Climate Foundation, Berlin: Ecologic Institute, visualization by Ecologic Institute, design by Noble Studio / European Climate Foundation.
- ¹⁵ To illustrate the speed at which developments can occur, Luxembourg's climate law was adopted by its Chamber of Deputies in December 2020 after our initial analysis was complete. Even though it has a clear long-term focus, it was therefore not included in the ten countries.
- ¹⁶ Updates on the ongoing processes since the original publication of this research in Duwe & Evans (2020) (e.g. updated draft in Spain and new amendment bill in Ireland) have been included in the current policy brief. The inclusion of the Hungarian law is also a notable addition.
- ¹⁷ European Parliament and Council. (2018b). Regulation (EU) 2018/842 of the European Parliament and of the Council of 30 May 2018 on binding annual greenhouse gas emission reductions by Member States from 2021 to 2030 contributing to climate action to meet commitments under the Paris Agreement and amending Regulation (EU) No 525/2013 (Text with EEA relevance), PE/3/2018/REV/2, Brussels.
- ¹⁸ For additional detail on individual policies and specifics on financing included in individual laws, see Duwe, M. & Evans, N. (2020). *Climate laws in Europe: Good Practices in Net-Zero Management*. Brussels: European Climate Foundation, Berlin: Ecologic Institute.
- ¹⁹ See: <https://www.klimaataakkoord.nl/>
- ²⁰ Averchenkova, A., Fankhauser, S., Finnegan, J. (2018). *The Role of Independent Bodies in Climate Governance: The UK's Committee on Climate Change*. London: LSE Grantham Institute on Climate Change and the Environment.
- ²¹ The draft Spanish law foresees the government participating in a debate on the advisory body's reporting. However, time will tell how this planned process plays out in practice.

²² Full title: United Nations Economic Commission for Europe (UNECE) Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters

²³ Details on the website of the UK Climate Assembly at <https://www.climateassembly.uk/about/index.html> (accessed November 24, 2020).

²⁴ See for example Dunetz, D. (2020) Towards Democratic Innovation in Israel: The Case for Citizens' Assemblies. IPPI Policy Paper <https://www.ippi.org.il/towards-democratic-innovation-in-israel/> (accessed December 4, 2020).

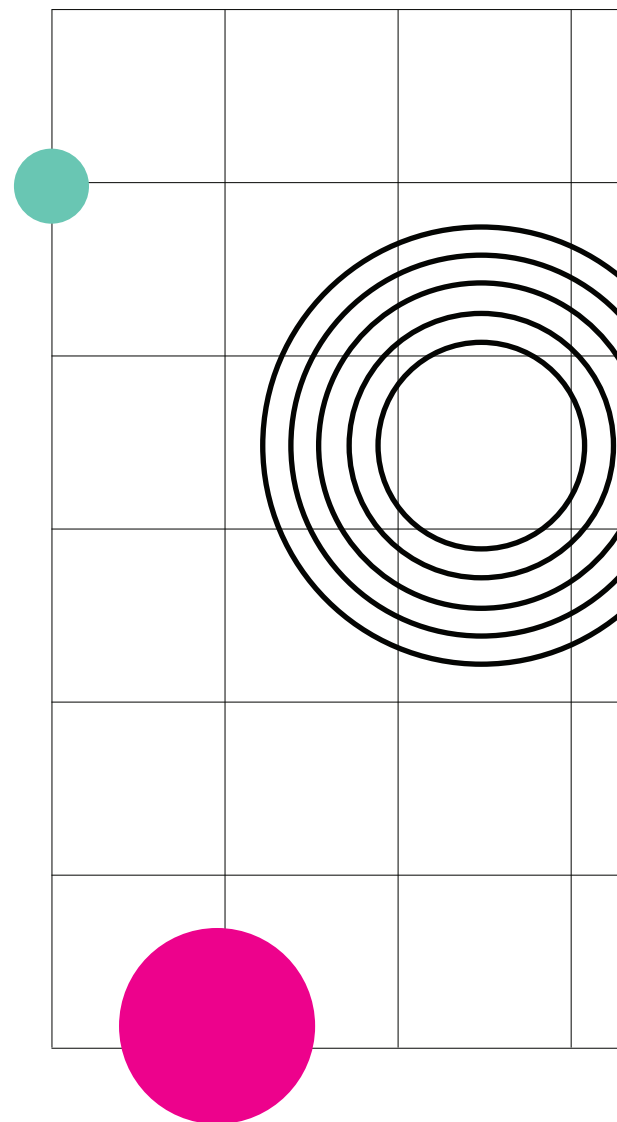
²⁵ Twitter message available at <https://twitter.com/DanJoergensen/status/1203060921272274944?s%3D20&sa=D&ust=1606250994562000&usg=AOvVaw0liw0cr01tbpbBOx2w6MI> (accessed 23 November 2020).



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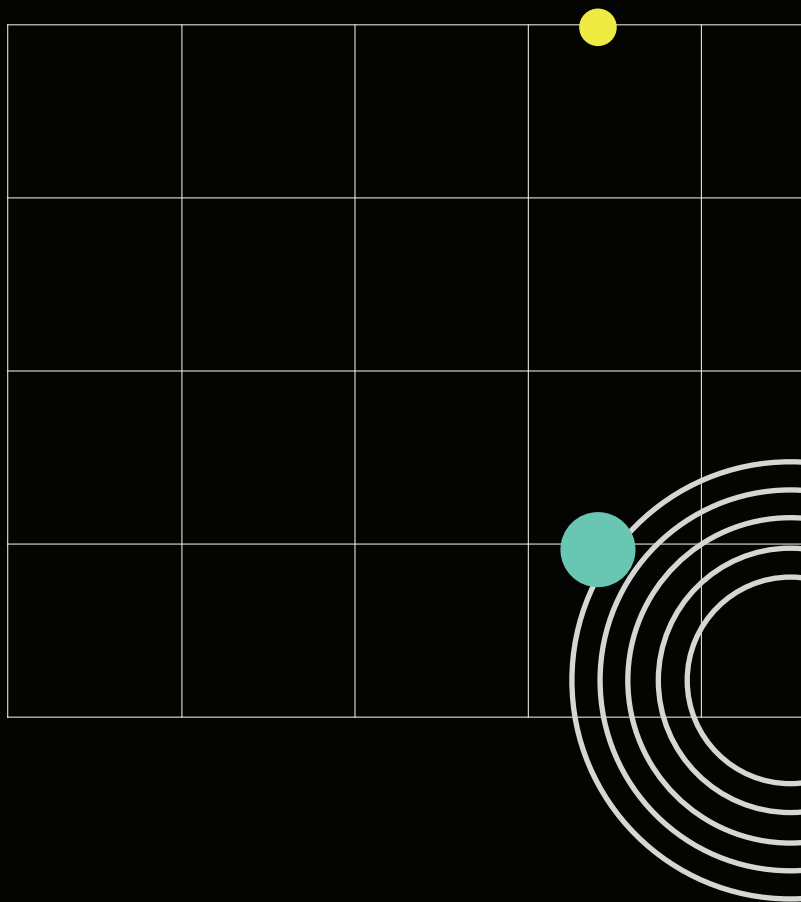
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Release date: February 2021



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Design: www.tinker.co.il

Cover: www.danielgoldfarbart.com



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