



Ariadne-Report
Executive summary for policymakers

Mapping variation in institutions for climate policymaking

Climate institutions in Germany, the
United Kingdom, Sweden, and Australia



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EXECUTIVE SUMMARY

Why should we analyse climate institutions?

Countries around the world have set increasingly ambitious targets to mitigate climate change. To deliver on these targets, policymakers have (i) implemented new policies, (ii) increased the ambition of existing policies, and (iii) created 'climate institutions'. A substantial body of research is devoted to the first two phenomena. Yet we know little about climate institutions, despite their proliferation. This is a significant gap, which matters because climate institutions formalise the process of climate policymaking, steering its development, delivery, and potential improvement.

Existing research offers no systematic definition or framework for cross-country analysis of multiple climate institutions. Most studies focus on a single type of institution, such as climate laws or climate advisory bodies (Duwe and Evans 2020; Weaver, Lötjönen, and Ollikainen 2019; Evans and Duwe 2021) and their effect on a single outcome (e.g. transparency, commitment). Others adopt encompassing definitions covering multiple climate institutions (MacNeil 2021), which obscure important differentiation between formal and informal institutions, and test their correlation with policymaking outcomes, e.g. stringency (Guy, Shears, and Meckling 2023). As a result, we lack a nuanced understanding of the range of effects of climate institutions and the mechanisms by which these oc-

cur. This is necessary to shed light on the impact of climate institutions on climate policymaking and to inform proposals for designing and reforming these institutions

Approach

This report therefore seeks to answer three research questions. First, what are climate institutions and how can we characterise them across countries? Second, what effects do climate institutions have on climate policymaking? Third, in light of these findings, what insights can we draw for German climate governance and what options exist for institutional reform? We propose a definition of climate institutions and develop a conceptual framework for analysing and comparing their effects. We test the framework on a sample of four countries: Germany, the United Kingdom, Sweden, and Australia. We selected wealthy democracies which have developed climate institutions, but which vary in terms of their macro-political context. Germany and Sweden are corporatist, EU members with coordinated market economies; the UK and Australia are pluralist, non-EU members with liberal market economies. This diverse case selection approach recognises that macro-political institutional features can influence climate policy outcomes. By allowing us to identify common features of climate institutions across different contexts, we can also identify necessary conditions for an institution to classify as a

climate institution and therefore develop a clear definition. Our case analysis draws on 22 interviews with climate policy experts (~5 per country) and desktop analysis.

Figure 1: Strategic challenges present in our analytical framework.
Source: Own illustration.

Agenda seeding / setting	Seeding ideas about climate policy in public / elite discourse. Place climate policy on the political agenda
Common knowledge	Establish common understanding of issues relevant to climate policy among elites; awareness this knowledge is shared
Transparency	Increase access to information about climate policymaking. Includes internal (among government entities) and external (for the public)
Integration	Integration of climate objectives into all aspects of policy, particularly in non-climate policy areas; strategic integration of cross-sector policy packages to ensure coherence
Coordination	Mechanisms to coordinate development, monitoring, and delivery of climate policy so actors work in concert. Includes horizontal (among actors at one level of government) and vertical (across different levels of government) coordination
Accountability	Holding government to account to deliver on stated targets; presence of (in)formal accountability mechanisms both ex ante and ex post
Commitment	Indicate long-term direction of climate policy and establish credibility of long-term promises; reduce risk of policy reversals; formal vs informal
Consultation	Gathering input from government and non-government stakeholders (inc. business) on proposed policies or policy issues
Compensation	Providing compensation (e.g. funding, pay-offs) to actors who are negatively affected by climate policies with the aim of achieving buy-in

What is a climate institution?

We define a climate institution as a formal, state institution established to steer the development and / or implementation of national climate mitigation policy from a multi-sectoral perspective. The types of institutions that meet these criteria are: (i) climate laws, (ii) climate advisory bodies, (iii) climate ministries, (iv) within-ministry / agency climate units, (v) inter-ministerial coordination bodies, (vi) parliamentary committees. We also include a country-specific 'other' category. Although this definition does not include all institutions which matter for climate policymaking, it allows us to differentiate effects of climate institutions from other (e.g. informal, non-government) climate-related institutions. Its narrow scope and formalistic focus also ensure a high degree of replicability, which helps to clearly identify these different types of institutions across the four countries in our sample and can inform future comparative work in this field.

An analytical framework to analyse climate institutions

Drawing on a review of the literatures on policymaking, in general, and climate institutions, in particular, we devised a framework to analyse the effects of climate institutions. 'Strategic challenges' are its first plank. Climate change policymaking is characterised by a series of complex challenges. These include: the need to credibly commit to long-term targets, the need to compensate losers from climate policy, the need to coordinate implementation across all sectors of the economy, and to establish basic knowledge and transparency in climate policymaking. Following, inter alia, Avertchenkova and Nachmany (2017) and MacNeil (2021), we conceive of institutions as a means to respond to these strategic challenges. A classic response to the challenge of commitment, for example, is to delegate policy decisions to independent institutions (Gilardi 2002). Figure 1 summarises the list of strategic challenges, derived from the literature

on the role of institutions in climate policymaking and effects of climate institutions.

The second plank of our framework is the 'stylised causal chain' which illustrates how climate institutions engender effects on climate policymaking via addressing these strategic challenges. The chain (Figure 2) consists of the institution's function, what it is intended to do, as specified in its mandate or the relevant piece of legislation, the mechanism by which (how) an effect is engendered, an intervening variable which influences the effect and the effect on the strategic challenge (e.g. achieving commitment). Figure 2 also indicates that effects on strategic challenges have knock-on effects on policy (though the broken line indicates that we do not explore this in our analysis), and that climate institutions and other institutions can have other effects.

Results

We present our results (i) within each country in our sample, (ii) comparing functions of institutions across cases, and (iii) comparing effects of institutions across cases.

Within-case analysis

Contrary to the literature, which tends to focus on climate laws and climate advisory bodies, we discovered a rich landscape of climate institutions across our cases. The figure below (Figure 3) high-

lights four stylised chains from across our sample to illustrate our analytical approach.

Variation in functions

Variation in the design of institutions is greatest among climate laws and climate advisory bodies (see Table 1). Climate laws vary in whether they legislate targets, whether they require governments to adopt climate policy plans, and whether they legislate specific policy instruments. Climate advisory bodies all provide ex-post analysis, but vary in the

extent to which they provide ex-ante analysis and ex-ante policy advice. Other institutions – like climate ministries and parliamentary committees – are more similar across cases.

An overarching insight is that several types of climate institutions serve the function of imposing a regular process for climate policymaking. Climate laws, for instance, impose a timeline upon which climate policy is created and delivered – for example through five-year carbon budgets in the UK, annual reports to parliament in Australia, and cli-

Figure 2: Analytical framework.
Source: Own illustration.

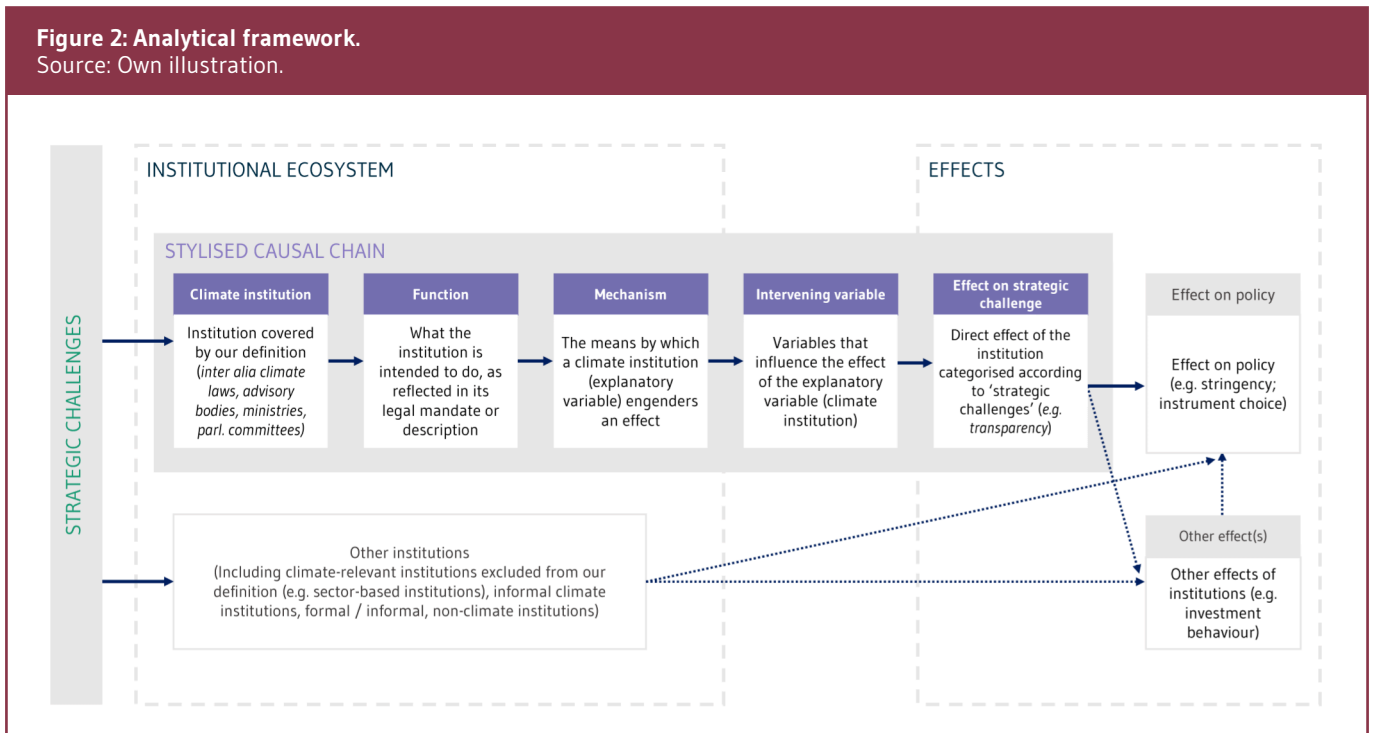


Figure 3: Examples of stylised causal chains in each case.
Source: Own illustration.

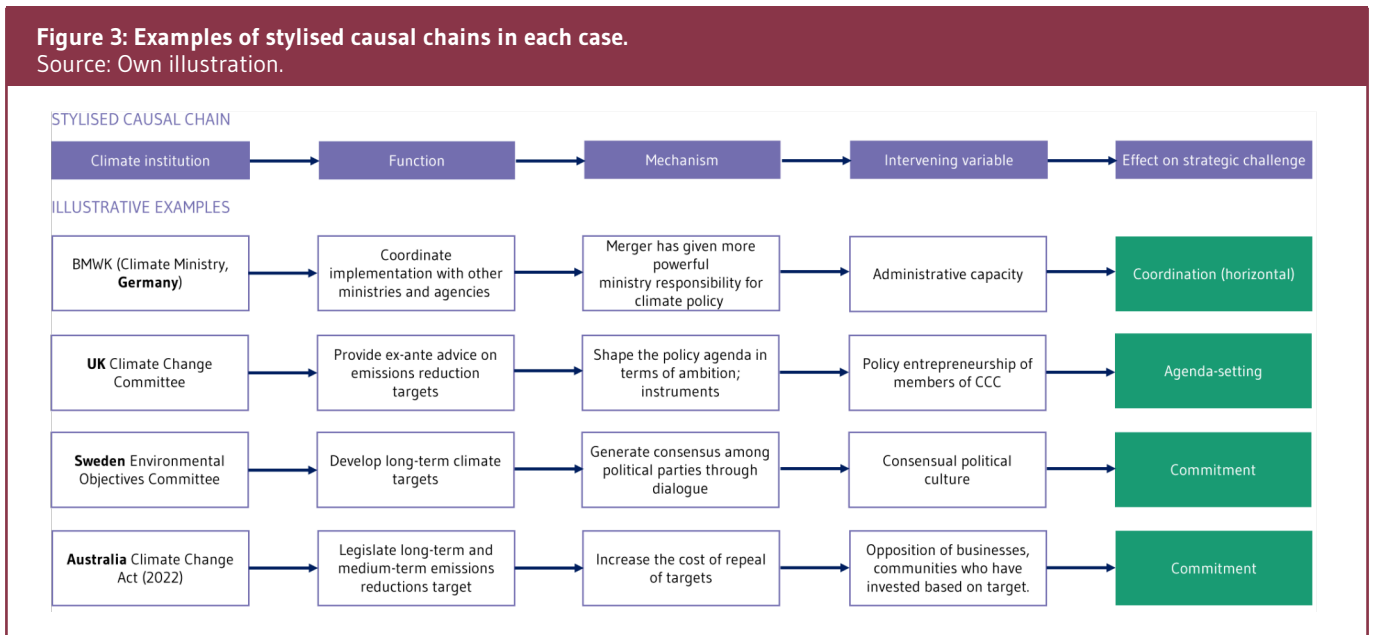


Table 1: Variation in functions, as set out in mandate or legislation (as of June 2023)¹

Climate institution	Function categories	Germany	Australia	Sweden	United Kingdom
Climate law	Legislate long-term targets E.g. legislate net zero emissions by 2050				
	Legislate mid-term targets E.g. 65% reduction by 2030				
	Legislate sectoral targets E.g. energy sector must reduce emissions by 40% by 2030				
	Establish policy instruments E.g. legislate a carbon pricing mechanism (excludes policy plans)				
	Create climate advisory body Provide statutory basis for climate advisory body, set mandate and structure				
	Require regular climate policy reporting Set requirements for government to report on climate policy progress (e.g. annual statement to parliament)				
	Establish climate policy planning process Require development of climate policy plans on regular basis				
Climate advisory body	Ex-post analysis and reporting Analysis and reporting on emissions already emitted and existing previous / current effects of policies				
	Ex-ante analysis and reporting Analysis of the future trajectory of emissions and future policy impacts				
	Climate minister must respond to analysis Statutory obligation for the climate minister to respond to reports from climate advisory body				
	Ex-ante policy advice Providing advice on future policy measures to achieve targets				
	Advise on targets Propose medium- and long-term emissions reduction targets (e.g. carbon budget)				
Climate ministry	Develop climate policies Draft new climate legislation; assess implementation options				
	Consult public / stakeholders on development of policy Consult relevant stakeholders on policy impacts; elicit expert input				
	Work with other ministries to integrate climate policy objectives into other policy sectors E.g. work with transport ministry to prioritise policies for electric vehicles				
	Coordinate implementation of climate policy with other ministries / agencies Coordinate enforcement, infrastructure development, other areas of policy delivery with relevant ministries / agencies				
Within-ministry / within-agency climate unit	Monitoring and analysis of government climate policy Knowledge centre for climate policy within the non-climate ministry				
	Integrate climate policy objectives into policy of non-climate ministry Promote consideration of climate objectives in internal policy decisions	Sometimes			
	Develop sector-based climate policies E.g. policy for renovations for energy efficiency				
	Coordinate delivery of climate policy Work with other relevant entities to deliver and enforce climate policy				
Climate-focused inter-ministerial coordination committee	Integrate climate policy across ministries Provide forum and support for integration of climate policy objectives into all sectors	NA – inactive		NA – inactive	
	Coordinate development and delivery of climate policy Provide forum and support for coordination of policy implementation	NA – inactive		NA – inactive	
Parliamentary committee	Assess new climate policy proposals (new legislation) Scrutinise new climate-relevant legislation from cross-party perspective				
	Consult with experts / stakeholders on climate policy Call expert witnesses to input on policy review				
	Provide recommendations to improve climate policy E.g. publish reports, conduct special reviews				
	Assess implementation of climate policy Review and report on policy delivery				

Key Yes No

¹ In the German case, the functions of its climate law reflect the situation prior to the adoption of the Klimaschutznovelle, given that only the draft version of this amendment to the Bundes-Klimaschutzgesetz was available at the time of finalising this report (early August 2023).

mate policy plans² that should be published every four years (Sweden) or five (Germany) years. Climate advisory bodies, similarly, publish reports according to a regular, mostly annual, timeline, contributing to a legally specified rhythm of scrutiny. Other institutions also contribute to this policy process – e.g. climate units publish emissions data, climate ministries prepare policy plans. With the proliferation of climate institutions, we observe the consolidation of a ‘climate policy cycle’, itself comprised of multiple cycles of (usually annual) monitoring and (usually five-year) planning.

Variation in effects

Our comparative analysis of effects of climate institutions found that most climate institutions address (i) attention-related and (ii) epistemic, or knowledge-related, strategic challenges. All institu-

tions in our sample have some kind of agenda-setting effect – including through developing the substance of climate policy, and / or facilitating the climate policy process described above, whereby climate policy is regularly returned to the political agenda. Many promote transparency – both within the government and for the public – and contribute to the establishment of common knowledge about climate policy impacts and policy solutions.

Table 2 summarises institutions and their effects across cases, with cells coloured according to number of countries in our sample, where we found the effect to be present.

There are few institutions, on the other hand, that facilitate integration and coordination. It is notable that a ‘climate cabinet’ – with potential to enhance in-

tegration – has been created and subsequently dismantled in two (Germany and Sweden) of our cases in the past. Save for the newly created National Net Zero Authority / Economy Agency³ in Australia (not included in our analysis because of its novelty), no climate institutions exist to deliver compensation for actors who stand to lose from climate policy. Finally, climate laws are the primary devices through which governments create and bolster their commitment to long-term climate policy goals; and all institutions are limited in the degree to which they can hold governments accountable.

Table 2: Variation in effects across sample of countries

Climate institution	Agenda setting / seeding	Common knowledge	Transparency	Integration	Coordination	Accountability	Commitment	Consultation	Compensation
Climate Law				DEU		Ex ante, informal	Informal		
						Ex ante, formal			
						Ex post, informal			
						Ex post, formal: DEU			
Advisory body	Agenda seeding: GBR, AUS, SWE		External			Ex ante, informal	Informal: GBR, AUS	Informal	
						Ex ante, formal			
	Agenda setting					Ex post, informal	Formal	Formal: AUS, DEU	
						Ex post, formal: DEU (ERK)			
Ministry			Internal		Horizontal		Informal: DEU	Formal: AUS, DEU	
							Formal		
Within-ministry / within-agency climate unit		Within-ministry	Internal		Within-ministry			Formal: AUS	
					Cross-ministerial: AUS, GBR, DEU				
Climate-focused inter-ministerial coordination mechanism	Potentially GBR, AUS		Internal: GBR, AUS	Potentially GBR, AUS	Cross-ministerial: GBR, AUS				
Parliamentary committee						Informal - ex-ante and ex-post	Informal: SWE	Formal	
Key	Effect present in all countries			Effect present in ≥ 1 country, <4 countries			Effect present in no countries		
<p>Note: We code advisory bodies as <i>agenda seeding</i> when they are empowered to initiate their own reports. We code advisory bodies as <i>agenda setting</i> when their reports or other activities help to return climate policy to the political agenda. We only distinguish between agenda seeding and agenda setting in the case of advisory bodies, where we are able to disentangle these effects. For the other institutions, we combine the effects of agenda seeding and agenda setting. Where we specify a sub-category in a cell, we imply that there are null effects for the other sub-categories – when we include these ‘null’ sub-categories we do so for emphasis.</p>									

² Germany’s Climate Action Plan is pursuant to Article 15 of the European Governance Regulation (KSG 2019, secs 1, §2, 7), which suggests “Member States should, where necessary, update those strategies every five years” (EU 2018, arts. 15, 1). Under the draft amendment to the Bundes-Klimaschutzgesetz, the German government will be obliged to produce a new climate policy programme within twelve months of the start of a new legislative term (BMWK 2023b, secs 3, §9, (1)).

³ On 14 June 2023, the government announced that the agency “has been established as an interim step whilst a statutory Net Zero Authority is established. The Agency will also undertake work to design and establish the statutory Authority.” (PM&C 2023b)

Insights for German climate institutions

In late March 2023, Germany proposed an amendment to the *Bundes-Klimaschutzgesetz* (KSG), the *Klimaschutznovelle* (Koalitionsausschuss 2023), with potentially profound implications for German climate institutions. Our analytical framework and comparative analysis help us shed light on (i) how the *Klimaschutznovelle* may address deficits in the landscape of German climate institutions and (ii) deficits that will likely remain, even if the amendment is implemented as proposed. We discuss how the amendment might help Germany better grapple with five strategic challenges – integration, horizontal coordination, transparency, accountability, and agenda seeding / setting – and leverage our comparative analysis to identify options for institutional reform aimed at filling some of the key remaining gaps.

Integration and horizontal coordination

The *Klimaschutznovelle* has the potential to address integration-related deficits by adopting a whole-of-government, as opposed to a sector-specific, approach to devising *Sofortprogramme* (immediate action programmes): it abolishes Germany's annual sector-specific reduction targets (*Sektorziele*) and explicitly mentions the option that ministries suggest cross-sectoral measures to correct overshoot. Yet, the amendment does not set out procedures for devising and evaluating cross-sectoral *Sofortprogramme*, nor does it contain suggestions for improving coordination between ministries. To help fill these gaps, we outline the following reform options:

- ▶ **Option 1: Establish a procedure for crafting cross-sectoral *Sofort-* and *Förderprogramme*.** One approach may be to specify an iterative, two-step process. First, the government could adopt new or adjust existing cross-sectoral policies. In a second step, it could consider sector-specific measures to close the gap between the emissions reductions required for it to meet its annual reduction target(s) and the likely emissions reductions delivered by

the cross-sectoral measures. In this way, *Sofort-* and *Förderprogramme* (subsidy programmes) could enhance integration by encouraging cross-sectoral policy reforms.

- ▶ **Option 2: Adopt additional criteria for evaluating cross-sectoral *Sofort-* and *Förderprogramme*.** There is an opportunity to expand the range of criteria used to evaluate *Sofort-* and *Förderprogramme* beyond their potential for emissions reduction. Additional evaluative criteria could include fiscal costs, cost effectiveness, and the programmes' distributive implications – as well as the trade-offs between these criteria across alternative policy pathways.
- ▶ **Option 3: Establish intra- and inter-ministerial working groups to support coordination and integrated climate policymaking.** These groups could provide a forum for dialogue between ministries, help to synthesise information from across government, and elicit expert input. In this way, intra- and inter-ministerial working groups would facilitate a coordinated approach to climate policymaking which aims to achieve coherence across climate and other policy objectives.
- ▶ **Option 4: Reinstate the *Klimakabinett*.** Several countries (including, in the past, Germany) have tried to address the challenge of horizontal coordination by creating 'climate cabinets' (*Klimakabinett*): a forum where ministries with portfolios relevant for climate policymaking can coordinate its development, monitoring, and delivery. There is an opportunity for Germany to reinstate its climate cabinet – though this requires political will and may be more challenging when ministries are controlled by different parties.

Transparency and accountability

Ex-ante accountability – the ability to hold the government to account to deliver on future emissions targets – is relatively weak under the original KSG,

which grants the *Expertenrat für Klimafragen* (ERK) a narrow mandate to analyse policy measures. The modelling, commissioned by the German Environment Agency (*Umweltbundesamt*, UBA), used to produce the *Projektionsdaten* (projected emissions) is also limited by a lack of transparency and narrow scope of the scenarios that are analysed. The *Klimaschutznovelle* potentially boosts informal, ex-ante accountability by granting the ERK the right (*Initiativrecht*) to initiate analyses of policy measures without an explicit request by either government or parliament. Yet, the overall effect on accountability is ambiguous because abolishing the legally binding *Sektorziele* (sector targets) also weakens ex-post, formal accountability. To increase transparency and overall accountability, we outline three reform options:

- ▶ **Option 5: Improve ex-ante analysis via more transparent modelling by the UBA.** Transparency could be improved by (i) increasing access to the technical approach adopted in the UBA's modelling and (ii) increasing the scope of the scenarios considered to include measures currently not considered by the government.
- ▶ **Option 6: Boost the ERK's analytical capacity to enable it to effectively deploy its *Initiativrecht*.** Providing ex-ante advice on policy measures requires detailed ex-ante analysis of policy instrument mixes and pathways. There is an opportunity to expand the ERK's analytical capacity to help it deliver this advice, for instance through increased resources to contract research, by teaming up with other expert bodies, or by endowing the ERK with in-house modelling capacity.

Agenda seeding and setting

The amendment's *Initiativrecht* does not only improve the ERK's ability to hold the government to account ex-ante, but also enables it to follow the lead of other climate advisory bodies, notably the UK CCC, by playing a greater role in seeding ideas about climate policy and shape the

climate policy agenda. We therefore suggest the following reform option:

- ▶ **Option 7: Strengthen agenda setting and seeding via more active policy entrepreneurship by the ERK.** The ERK could act as a ‘policy entrepreneur’ – by, for example engaging more actively with a range of stakeholders and the media. Greater policy entrepreneurship, however, comes with the risk that the ERK will be perceived as unduly activist, which would undermine its credibility. Shying away from a more entrepreneurial stance, similarly, comes with costs: it could prevent the ERK from realising the potential for greater agenda seeding and setting activity created by the *Initiativrecht*. Enhancing the ERK’s analytical capacity may help to resolve this tension by ensuring recommendations are supported by rigorous analysis.

Conclusion

This study seeks to (i) advance the still nascent academic literature on climate institutions and (ii) to improve the policy debate surrounding these institutions. By proposing a definition of climate institutions and a framework to analyse their effects, we address two gaps in the academic literature – namely, that we (i) lack conceptual tools for characterising climate institutions across countries and (ii) comparing their effects on climate policymaking. The results of our comparative analysis contribute to our understanding of climate change governance in each of these countries, while our analysis of the German case specifically contributes to the ongoing policy debate about the likely impact of the *Klimaschutznovelle*. By applying our analytical framework to identify reform options for German climate institutions, we further demonstrate how it can be used as a diagnostic tool to identify deficits and a structured approach to ‘learning’ from other countries based on comparative analysis.

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Ariadne's thread through the energy transition: The Kopernikus project Ariadne leads the way in a joint learning process with representatives from politics, business and society, exploring options for shaping the energy transition and providing scientific guidance to policy makers along the pathway towards a climate-neutral Germany.

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Who is Ariadne? In Greek mythology, Ariadne's thread enabled the legendary hero Theseus to safely navigate the labyrinth of the Minotaur. This is the guiding principle of the Ariadne energy transition project, in which a consortium of 27 partners is providing guidance and orientation for shaping the energy transition through excellent research as a joint learning process between science, politics, business and society.

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