



# The politics of domestic climate governance: making sense of complex participation patterns

Elin Lerum Boasson, Charlotte Burns & Simone Pulver

To cite this article: Elin Lerum Boasson, Charlotte Burns & Simone Pulver (2022): The politics of domestic climate governance: making sense of complex participation patterns, Journal of European Public Policy, DOI: [10.1080/13501763.2022.2096102](https://doi.org/10.1080/13501763.2022.2096102)

To link to this article: <https://doi.org/10.1080/13501763.2022.2096102>



© 2022 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group



Published online: 11 Jul 2022.



Submit your article to this journal [↗](#)



Article views: 854



View related articles [↗](#)



View Crossmark data [↗](#)

# The politics of domestic climate governance: making sense of complex participation patterns

Elin Lerum Boasson<sup>a</sup>, Charlotte Burns<sup>b</sup> and Simone Pulver<sup>c</sup>

<sup>a</sup>Cicero Center for International Climate Research, University of Oslo, Oslo, Norway; <sup>b</sup>Politics and IR, The University of Sheffield, Sheffield, UK; <sup>c</sup>Environmental Studies, UC Santa Barbara, Santa Barbara, CA, USA

## ABSTRACT

This article reviews literature on six actor groups engaged in domestic mitigation governance. It evaluates the usefulness of three climate governance models: market failure, socio-technological transition and public support. For each group, three modes of action are considered: influencing, decision-making and implementing. The public support model is found to best capture the wide range of actors and real-world, complex participation patterns of domestic climate governance. The socio-technological transitions and market failure models in their narrow focus on political and business actors ignore the influencing roles of other groups, such as climate advocacy organizations, anti-climate action groups, Indigenous people's organizations and labor unions. However, they offer more insight on actor engagement in decision-making and implementation, roles mostly ignored by the public support model. Overall, more systematic comparative research is needed on a wider range of actors, on domestic climate governance in the global South, on differences across countries, sectors and policy domains and on interactions between actors.

**KEYWORDS** Climate governance; climate policy; climate politics; climate transition; policy implementation; socio-technological transition

## Introduction

Climate change increasingly shapes the growth strategies pursued by states and impacts the daily lives of citizens in profound ways. Since the Paris Agreement in 2015, climate mitigation and adaptation have become a standard part of domestic governance repertoires and agendas, with countries adopting ever increasing policy targets, strategies and instruments (Iacobuta et al., 2018). Concurrently, there has been a significant growth in literature documenting the emergence of climate governance, understood as 'the structures, processes, and actions through which private and public actors seek to mitigate and

**CONTACT** Charlotte Burns  [Charlotte.Burns@sheffield.ac.uk](mailto:Charlotte.Burns@sheffield.ac.uk)

© 2022 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group

This is an Open Access article distributed under the terms of the Creative Commons Attribution-NonCommercial-NoDerivatives License (<http://creativecommons.org/licenses/by-nc-nd/4.0/>), which permits non-commercial re-use, distribution, and reproduction in any medium, provided the original work is properly cited, and is not altered, transformed, or built upon in any way.

adapt to climate change' (International Panel on Climate Change [IPCC], 2021). Research has focused on the levels of ambition embodied in domestic climate governance efforts (Flagg & Rudel, 2021), the combination of policy instruments leading to ambitious mitigation efforts (Meckling et al., 2015) and the evolution of domestic institutions for climate governance (Dubash et al., 2021). We complement this focus on institutions, policy instruments and outcomes with a review of the *actors* engaged in domestic climate governance.

While extensive research on the roles of individual actor groups in promoting or hindering governance efforts exists there have been few attempts to organize this material in a systematic way to offer a high-level account of who carries out domestic climate governance. We consequently lack a comprehensive understanding of who shapes domestic climate governance, and how it operates and varies across states.

Boasson and Tatham (2022) present three core models of domestic climate governance: *market failure*, *socio-technological transitions* and *public support*. We review the wide-ranging empirical literature on domestic climate governance actors to assess the extent to which *the three models accurately capture participation patterns of domestic climate governance*. We also seek to *identify gaps in the literature to direct future research efforts*. To make our task manageable we concentrate on domestic mitigation efforts and exclude research on climate adaptation. We also limit our review to six actor groups, selected to represent established and emerging constituencies. The established groups include politicians, business organizations, climate advocacy organizations and anti-climate action groups, which have been engaged in domestic mitigation governance since the 1990s. The two emerging groups – Indigenous peoples' organizations and labor unions – are increasingly prominent.

Below we outline the key characteristics of the three models of domestic governance and explain our review methodology. We summarize existing research on the six highlighted actor groups, followed by a discussion of how the three models capture the evolving landscape of domestic mitigation governance. We find that the models emphasize different aspects of climate governance as it has evolved. For capturing the range of actors engaged in domestic climate mitigation the public support model is most helpful as it captures and depicts the increasingly contested nature of climate governance. We also find some clear gaps in the scope of the existing literature, which remains dominated by studies from the global North and lacks robust, systematic comparative analyses of the ways actors engage in governance processes in different policy settings and geographic areas.

## **Domestic climate governance: models and modes of action**

Models of domestic climate governance have evolved over time, offering shifting assessments of the challenge presented by climate change, of

potential solutions and of the key actors engaged in climate politics. The market failure model, rooted in economics, characterizes climate change as a problem of misaligned incentives and a failure of collective action (Stavins, 2011). In order to internalize carbon pollution, government authorities must cooperate to enact policies to correct imperfect market signals (Nordhaus, n.d.). Carbon pricing is the key tool adopted by legislators and governments. In contrast, under the socio-technological transition model, rooted in innovation and transition studies, the primary domestic climate governance challenge is overcoming the inertia of fossil-fuel based industrial, infrastructural and social systems. In order to cut GHG emissions, major changes are required in the energy, transport, food and waste systems that structure modern society (Köhler et al., 2019). Solutions can be found in technology, process and system innovation and disruption (Geels, 2019). Finally, according to the public support model, grounded in political science and sociology, climate governance results from contests between a broad range of actors engaged in a host of political and even existential conflicts (Brulle, 2019; Colgan et al., 2021; Mildenerger, 2020; Rosenbloom & Rinscheid, 2020). The public support model depicts climate governance as politically charged like other major societal changes such as industrialization or the creation of the welfare state.

To compare the key actors and activities privileged by the models, we focus on three key modes of action: influencing, decision-making and implementing. *Influencers* seek to affect, sustain or change climate governance. Policy cycle analysts tend to understand influencing as agenda-setting, occurring early on in governance processes, when actors seek to shape how a policy is framed and perceived before it is negotiated and eventually adopted or rejected (Kingdon, 1995; Knill & Tosun, 2012, p. 106). However, the later stages of policy-making may also be subject to influence, for instance, through a re-definition of how decisions are understood. Actors can use multiple channels to exert influence, such as participation in public consultations, the generation and dissemination of (dis)information, advocacy and protest activities, and direct contact with decision-makers. Finally, actors do not have to be successful to qualify as influencers.

*Decision-makers* set rules via bargaining or deliberation on targets, strategies and instruments (Knill & Tosun, 2012, pp. 121–133). While political executives and legislators are typically regarded as the primary decision-makers (Iacobuta et al., 2018), an increasing number of non-governmental actors participate through partnerships (Forsyth, 2010), voluntary agreements (Krarup & Ramesohl, 2002), certification (Pattberg & Widerberg, 2016) or other voluntary initiatives. Because climate governance seeks to reform highly technical and complex sectors, and these reforms themselves are complex and often span multiple jurisdictions, decision-makers may have a limited understanding of the consequences of their decisions (Stokes, 2020, p. 5).

*Implementers* carry out decisions and note what happens thereafter (Hill & Hupe, 2014). Implementation studies show that decisions may be radically transformed during the implementation phase (Hill & Hupe, 2014). We have adopted a broad understanding of implementation that encompasses agencies implementing government decisions; states, provinces or cities giving effect to national objectives; or the enacting of decisions delegated to private actors, or corporate units carrying out decisions made by higher hierarchical levels within a corporation. Note that we only include actors who carry out implementation in the term ‘implementers’, those that aim to influence implementation are ‘influencers’.

These modes of action help to clarify the different actor groups privileged by the three models of domestic climate governance. The market failure model suggests that mitigation governance is a simple process in which the ambitions and price-levels of carbon-pricing schemes are set by politicians, the key decision-makers, acting on scientific advice (Boasson & Tatham, 2022) and influenced by business and environmental advocacy communities. Business actors, as implementers, then adjust to the policy instruments produced (Stavins, 2011). The socio-technological transition model of climate governance theorizes that *both* business and politicians are involved as decision-makers, although ‘green’ industries take the lead as influencers (Geels et al., 2016; Sovacool et al., 2020). Like the market failure model, businesses are the primary implementers (Boasson et al., 2021; Hochstetler, 2020), although given the focus on industrial transitions, labor is also involved in implementation (Grubert, 2020). Climate advocacy groups are given attention as influencers in some contributions (Boasson, 2015), while other groups are generally ignored. Finally, the public support model acknowledges a wider array of actors, primarily in an influencing role. Domestic climate governance is largely shaped by actors whose survival is at stake; hence it results from ‘existential politics’ where holders of climate-forcing assets, such as oil fields, clash with holders of climate-vulnerable assets, such as coastal property (Colgan et al., 2021, p. 587). Others emphasize contests between traditional interest groups, such as business, labor and political parties on one side, and disruptive social movements on the other (Mildenberger, 2020; Rosenbloom & Rinscheid, 2020). The model suggests that multiple actors take part in climate governance, exerting influence and seeking to be decision-makers. Assumptions on implementation are less clear. Table 1 shows the six key actor groups considered in this review and summarizes the roles ascribed to them by the different models of domestic climate governance.

## Review methodology

To establish the empirical basis for our evaluation we used a two-stage review process. First, focusing on research published since 2010, we searched for

**Table 1.** Key actors and their modes of action across domestic climate governance models.

		Domestic climate governance models			
		Market failure	Socio-technological transition	Public support	
Modes of action	Established actors	Political actors	Decision-makers	Decision-makers/ implementers	All three roles
		Business organizations	Influencers/ implementers	All three roles	All three roles
		Climate advocacy organizations	Influencers	Influencers	Influencers
		Anti-climate action groups	No role	No role	Influencers
	Emerging actors	Labor unions	No role	Implementers	Influencers/ decision-makers
		Indigenous peoples' organizations	No role	No role	Influencers/ decision-makers

Source: Authors' own.

contributions on the wide range of actors engaged in domestic mitigation governance. This search revealed the diversity of actors engaged in current national efforts to promote GHG mitigation but also that academic attention has only recently encompassed a wider group of actors. In the second stage of the review process, we narrowed our focus to six groups, representing both established and emerging actor groups; four with longer records of engagement in climate governance and more extensive research literatures, namely political actors, business organizations, climate action groups, and anti-climate action groups, and two groups that have become more prominent in recent years, Indigenous peoples' organizations, and labor unions. Extensive literature searches indicate that these groups have been subject to more research than other relatively new actors in climate governance.

For each group, we searched Web of Science, Scopus and Google Scholar, using the broad search terms: 'NAME OF GROUP' + 'climate change/policy/politics/governance', and iterations thereof. For instance, for the business section we used these search words: (business\* OR corporat\* OR firm\*) AND ('climate change' or 'Greenhouse gas'), and these terms by title: (business\* OR corporat\* OR firm\*) AND ('climate change' or 'Greenhouse gas'). To offset potential oversights in the search engines and search strategy we also applied snowballing, checking all works cited in the initially identified contributions. Additionally, we contacted leading scholars outside our own networks that had published on the actors in domestic climate governance covered in this review to ensure key publications were not omitted. We initially reviewed abstracts to ensure the article was appropriate for inclusion and then carried out a more detailed review to determine the merits of each piece. Given the unevenness in the existing literature across groups, our

analytical strategy was integrative, focused on synthesizing the key insights from the existing literature (Torraco, 2005).

## Theory versus practice: evaluating the three models

Synthesizing the literatures provided an empirical basis for evaluating the extent to which the three governance models reflect past and present realities of domestic mitigation governance. Each discussion is organized around the key activities of influencing, decision-making, and implementing and concludes with an assessment of the gaps revealed in the three governance models.

## Political actors

The term political actors denotes political party organizations, legislative assemblies and committees, governmental executives and political leaders of government ministries (Boasson, 2015, pp. 38–46). An extensive literature shows that politicians at different levels of governance are powerful climate policy *influencers*. The work on political parties and climate tends to focus upon the emergence of a partisan divide, especially but not exclusively in the US (Birch, 2020; Huber, 2020; Kenny, 2020; Tranter, 2017). Party positioning matters because it shapes domestic political agendas (Dunlap et al., 2016; McCright & Dunlap, 2011) and may contribute to policy gridlock (Klyza & Sousa, 2013). The positioning of political leaders is important for transmitting cues to the electorate (Guber, 2017). Leaders can positively drive (Hochstetler & Viola, 2012; Okereke et al., 2019) or impede policy development (Ferrante & Fearnside, 2019; Selby, 2019).

Governmental executives and legislatures at federal, state and local levels are *key decision-makers*, but there is variation in whether legislative assemblies or executives have the last word (Aamodt & Stensdal, 2017; Bang et al., 2015; Boasson et al., 2021). Legislatures may block or weaken policy (Bailey, 2019; Crowley, 2017) or more positively encourage or adopt it (Carter & Childs, 2018; Crowley, 2017). A key cause of inaction or passivity of legislators is the limited political salience of climate change amongst the public (Willis, 2020). High salience tends to motivate politicians to steer climate governance development, while low political salience can enable other actors to take the lead (Boasson, 2015; Boasson et al., 2021). The Paris Agreement of 2015 saw states decide their own emissions targets via nationally determined contributions, which empowered an array of substate actors (Gordon & Johnson, 2017) and saw a rapidly burgeoning literature on multi-level and poly-centric governance (Bulkeley, 2015; Chan et al., 2015; Jordan et al., 2018) and hybrid multi-lateralism emerge (Kuyper et al., 2018). Specifically, urban engagement and experiments in climate

governance (Castán Broto & Bulkeley, 2013) generated a huge and varied literature (see Castán Broto & Westman, 2020 for a review), illustrating the ways in which urban actors seek to influence policy and act as decision-makers in local and municipal contexts. However, the findings of this literatures remain mixed on how effectively municipal actors make a difference to climate governance and how this varies across policies and geography. Whilst there is limited research on the role of national level politicians in policy *implementation*, it is clear that municipal level politicians and sub-national legislatures play a crucial role in shaping local implementation and in addressing gaps in national political leadership (e.g., see Heikkinen et al., 2019; Lee & Koski, 2012; MacNeil, 2021).

The literature confirms that political actors are important decision-makers, who play a more pervasive role in climate governance than the market failure and the socio-technological transitions models suggest. Politicians are not mere decision-makers, they are also important influencers. Whilst they also act as implementers we know less about their importance in this respect. It is uncertain how political actor behavior varies across countries, climate issue-areas and political systems, especially as the literature tends to focus on the global North. There is also a gap in knowledge about how their role may change over time as climate governance matures.

## **Business organizations**

Business organizations, including for-profit enterprises and associations that aggregate and represent their interests in politics, have received significant scholarly attention for their role in climate governance. Research initially focussed on the influencing role of business organizations. Business exerts influence via its central role in maintaining economic growth (Paterson & P-Laberge, 2018), through financial support, lobbying activities, and social and business connections (Brulle, 2018; Gullberg, 2008; Kim et al., 2016), and through issue framing and shaping public opinion (Dunlap & McCright, 2015; Farrell, 2016; Supran & Oreskes, 2017). However, business influence varies across domestic political institutions (Christoff & Eckersley, 2011; Purdon, 2015), with some political systems enabling veto coalitions by well-organized incumbent sectoral interests (Perrow, 2010), while others are more open to challenger firms (Hochstetler & Kostka, 2015). Case studies document business influence across a range of national contexts, including the US (Downie, 2018; Dunlap & McCright, 2015; Kim et al., 2016; Nasiritousi, 2017; Supran & Oreskes, 2017), EU (Boasson & Wettestad, 2013), Australia (Ayling, 2017), China and India (Blondeel & Van de Graaf, 2018). In these settings, business has mostly sought to obstruct climate-policy development, although some business organizations provide and advocate for climate solutions, such as renewable energy, energy efficiency and carbon



removal. At times, renewable energy industries have even succeeded in influencing public policy more than large fossil-fuel actors, for instance in Germany (Leiren & Reimer, 2018), the EU (Boasson et al., 2021), the US (Stokes & Breetz, 2018), the Nordics (Kooij et al., 2018) and Japan (Li et al., 2019).

Business organizations also interact closely with political actors as implementers. Most research in this area focuses on business participation in market-based policy mechanisms. Firm size and capacity predict business responses to carbon pricing initiatives (Hultman et al., 2012; Niederberger & Saner, 2005), as do patterns of state-corporate relations (Benney, 2015; Engels et al., 2008). However, there is little systematic research on business compliance with such initiatives or their effectiveness in changing business practices (Green, 2021; for an exception see Wettestad & Gulbrandsen, 2017). Indeed, it appears that some organizations have exploited design flaws in climate policies to continue GHG polluting behavior, for instance in the early phases of the EU Emission Trading Scheme (Boasson & Wettestad, 2013). Business also plays a key implementing role in the development of new technology. In the energy field, renewable support schemes have been deployed to promote carbon free technologies (Lyon, 2016; 2015), countering existing subsidies that tend to favor fossil-fuel technologies (Coady et al., 2017). In Europe, this has resulted in many utilities developing renewables and supporting the continuation of renewable support schemes (Boasson et al., 2021). Here too, there has been exploitation by business of policy design flaws, e.g., in US states (Stokes, 2020, p. 25) and Poland (Boasson et al., 2021). Finally, businesses are central to the implementation of standards. Government-industry coordination enabled more ambitious fuel efficiency standards in Europe and Japan versus the US (Iguchi, 2015), while it hindered transformative technological change in Germany compared to the US (Meckling & Nahm, 2018). Building codes and efficiency standards drive behavior in the building sector (Berardi, 2017), although established supplier relationships may act as a barrier to change (Biggart & Lutzenhiser, 2007).

Private climate governance, spearheaded by business and through private-public partnerships, also makes business organizations decision-makers. GHG emissions disclosure is the most prevalent form (Hahn et al., 2015) of private climate governance and has become standard practice among leading corporate actors globally, although reporting rates vary dramatically from country to country (Pulver & Benney, 2013) and across sectors (Backman et al., 2017). Disclosure is sometimes accompanied by target setting, ranging from pledges to achieve carbon neutrality or to reduce carbon intensity per unit of product (Gouldson & Sullivan, 2014). While awareness of climate change is high across the globe, particularly among large corporations, rhetoric regarding carbon targets, emissions

reductions and climate-related business opportunities outpaces changes in business practices (Doda et al., 2016; Lister, 2018).

In aggregate, this body of research aligns with all three models of domestic climate governance, each of which assigns business a central role. The socio-technological transition model best characterizes the foundations of business influence and the breadth of business engagement needed to shift to low carbon. There is a growing recognition that decarbonization requires transformed industrial policies and energy innovation rather than individual carbon pricing initiatives. The public support model best captures the public contention around highly visible, high-polluting industry targets. Yet the global proliferation of carbon pricing schemes suggests that implementing carbon pricing policies is a common mode of business engagement in domestic mitigation governance (Thisted & Thisted, 2020; World Bank, 2022). Research gaps still exist: corporations in high GHG-emitting sectors, operating in large economies (Ihlen, 2009; Patchell & Hayter, 2013) have attracted the most attention. The small number of large, highly polluting corporations that seek to obstruct climate governance and the equally small number of large green corporations leading private governance initiatives are often assumed to be the template for business behavior in general. However, as domestic climate governance has progressed from target setting to implementation, most businesses engage in mitigation governance as implementers of climate policies, without taking on an active role as influencers or decision-makers. More research is needed on small and medium-sized firms and business organizations across all sectors and across a range of economies.

## Climate advocacy organizations

Some climate advocacy organizations are established environmental organizations, albeit with differing origin stories (Longhofer et al., 2016), financial models (Bloodgood & Tremblay-Boire, 2017) and positions on climate issues. Other organizations only work with one or a few climate issues (Moor et al., 2020).

Many climate action organizations seek to *influence* public policy (Moor et al., 2020; Wahlström et al., 2013), although they also target fossil-fuel producers, universities, corporate boards and investment funds (Dentoni et al., 2018; Fisher & Nasrin, 2021; Rosenbloom & Rinscheid, 2020). Moreover, their tactics vary considerably. Some apply broadly accepted modes of influence, such as lobbying, legal challenges and shareholder activism (Bratton & McCahery, 2015; Mildemberger et al., 2019; Olzak et al., 2016; Yildiz et al., 2015). Others utilize more confrontational tactics, such as boycotting and direct action (Cock, 2019; Fisher, 2019; Fisher et al., 2018; Hadden & Jasny, 2019; O'Brien, 2018; Swim et al., 2019).

Some studies indicate that climate advocacy organizations have a positive effect on reducing carbon emissions, but causal mechanisms remain under-explained (Fisher & Nasrin, 2021; Grant & Vasi, 2017). The influence of environmental organizations is enhanced if they succeed in framing an issue (Boasson, 2015), forcing decision-makers to compensate major climate losses with smaller climate victories (Boasson, 2015), create broad advocacy coalitions (Aamodt & Stensdal, 2017; Tjernshaugen, 2011) or when decision-makers under-estimate challenger technologies (Leiren & Reimer, 2018; Stokes & Breetz, 2018). Calls for more radical climate measures, can strengthen the climate agenda of moderate climate action organizations (Schifeling & Hoffman, 2019). Domestic environmental organizations tend to exercise greater influence in democracies and while international environmental groups are portrayed as having a generally positive effect, this finding is less strong in developing countries (Longhofer et al., 2016).

There was an upsurge in climate activism in the 2010–2020 period, especially from 2018 as Greta Thunberg's Fridays For Future saw record numbers joining protests (Fisher & Nasrin, 2021; Moor et al., 2020). In addition, a range of new groups emerged calling for phase-out, divestments and destabilization of fossil-fuel investments and structures (Rosenbloom & Rinscheid, 2020).

When it comes to *decision-making*, climate advocacy organizations rarely have a formal role, but some big international environmental organizations have participated in private climate governance initiatives, such as forest management partnerships (Forsyth, 2010), certification of products (Dentoni et al., 2018), corporate GHG emission reduction strategies (Comi et al., 2015) and greening supply chains (Van Huijstee et al., 2011). There is limited coverage of whether and how pro-climate organizations act as *implementers*, with the exception of 'naming and shaming' strategies that seek to increase countries' compliance with international climate obligations (i.e., Carbon Tracker, 2019).

Climate action groups are clearly much more prominent in climate governance than suggested by either the market failure or socio-technological transition models. However, research indicates they primarily act as influencers, although they also sometimes act as decision-makers. The lack of research on climate organizations acting as decision-makers and implementers could suggest that this is not their core focus but given the limited research it is difficult to draw a definitive conclusion.

### **Anti-climate action groups**

Organizations established to undermine climate science and/or oppose climate governance and action are treated as anti-climate action organizations. There is an extensive literature on the US, where these groups have

been present since the late 1980s and have made an increasing imprint on climate governance development (Boussalis & Coan, 2016; Brulle, 2014, 2019; Farrell, 2016). They include think-thanks, philanthropic foundations or looser activist networks, and some have the sole purpose of countering climate mitigation action (Almiron & Xifra, 2019).

Many US anti-climate organizations are financed by business (Brulle, 2014), and tend to have influence over flows of resources, communication and information (Farrell, 2016; Farrell et al., 2019). There are limited data about the links between anti-climate organizations and business outside of the US (Almiron & Xifra, 2019). Some research indicates that business organizations play a less pervasive role in spurring anti-climate organizations in Europe. For instance, the French Yellow vests movement was sparked by opposition to a carbon tax proposal (Chamorel, 2019). In Norway, grass-root organizations have emerged to campaign against toll-roads and other measures aimed at restricting fossil-fuel car use (Peters & Tatham, 2022).

On *decision-making*, several prominent anti-climate actors held posts within the Trump administration (Farrell et al., 2019). There are limited studies of how anti-climate actors influence the *implementation* of climate measures. However, Stokes (2020) documents how anti-climate groups, together with fossil-fuel-dominated utilities, succeeded in hindering the implementation of renewable energy policies in several US states. Anti-climate groups play an important role in their capacity to influence governance and can block implementation. Anti-climate actors may also pursue decision-making powers via political office. Most research on anti-climate groups has focused on the US, making it difficult to determine whether the US is an outlier or illustrative of wider patterns. There is some evidence that anti-climate activities are spreading (Forchtner, 2019).

## Emerging constituencies

During the 2010s, new domestic climate governance actors emerged, but remain under-researched. Here, we review the research literature on two such groups: labor and Indigenous peoples' organizations.

Labor represents employees, from private and public organizations, individual unions and federations. This field is dominated by studies of labor unions' efforts to *influence* climate policy. Some authors study how unions have contributed to the emergence of pro-climate policy framings such as 'climate justice' and 'green new deal' (Hampton, 2018; Markey & McIvor, 2019; Stevis & Felli, 2015), developed positions and programs on climate change (Räthzel et al., 2018; Snell & Fairbrother, 2010; Stevins, 2013), campaigned for specific climate measures (Clarke & Sahin-Dikmen, 2020, pp. 410–411) and formed alliances and networks with pro-climate actors or other sector-specific groups (Jost & Jacob, 2004; Stevis, 2018).

Other findings are more nuanced, for instance, Glynn et al. (2017) find that some European labor unions have promoted new climate policy initiatives, while others have tried to block such initiatives (see also Hampton, 2018; Houeland & Jordhus, 2020). Mildenberger (2020) presents a contrasting view, arguing that labor undermines the emergence of ambitious climate policy concluding that ‘climate policy-making has been systematically captured by carbon-intensive businesses and labor actors’ (Mildenberger, 2020, p. 3).

Labor unions may also be *decision-makers*, either because they are interwoven with certain political parties or because the political system gives them formal decision-making power over labor market issues, but there are limited studies of how this dynamic affects climate governance (for an exception see Glynn et al., 2017, p. 17). There is also relatively limited research on the role of unions as *implementers*, although there is some evidence of labor unions facilitating policy implementation in the UK (Hampton, 2018, pp. 475–476) and Denmark and Germany (Clarke & Sahin-Dikmen, 2020, pp. 408–409).

Indigenous peoples’ organizations represent communities, peoples and nations that ‘have a historical continuity with pre-invasion and pre-colonial societies that developed on their territories’ and ‘consider themselves distinct from other sectors of the societies now prevailing on those territories’ (United Nations, 2004 in Schroeder, 2010, p. 2). These groups have primarily been studied in relation to forest management. We know that Indigenous peoples’ organizations have influenced the development of REDD+ policies through opposition (Reed, 2011) and participation in consultation processes and multi-stakeholder bodies (Astuti & McGregor, 2015; Bushley, 2014; Gebara et al., 2014; Jodoin, 2017; Kashwan, 2015). Indigenous peoples have been excluded from national REDD+ readiness processes in some countries (Jodoin, 2017; Pham et al., 2014). In addition, some scholars have studied Indigenous peoples’ opposition to the extraction and transportation of fossil fuels on traditional lands (Bebbington & Bury, 2013; Claeys & Delgado Pugley, 2017; Coryat, 2015; Hindery, 2013; Wood & Rossiter, 2017) and opposition to large-scale climate mitigation projects that may affect traditional rights and lands (Brannstrom et al., 2017; Moreira et al., 2019; Zárate-Toledo et al., 2019). Studies of the deployment of small-scale renewable energy initiatives by Indigenous communities open the possibility of decision-making and implementing roles (Thornton & Comberti, 2017).

Overall, the literature indicates that labor and Indigenous peoples’ organizations do influence climate governance. However, the literature is insufficiently developed to enable us to draw robust conclusions about their roles as decision-makers and implementers. Nevertheless, our findings suggest that the market-failure and socio-technological transition models are too narrowly focused to capture these groups.

**Table 2.** Key actors and their modes of action in the empirical literature.

			Review of empirical literature
Modes of action	Established actors	Political actors	All three roles
		Business organizations	All three roles
	Climate advocacy organizations	Primarily influencers	
	Anti-climate action groups	Primarily influencers	
Emerging actors	Labor unions	All three roles	
	Indigenous peoples' organizations	All three roles	

Source: Authors' own.

## Discussions and conclusion

We have evaluated *how accurately the three models capture past and present participation patterns of domestic climate governance*. We provided a high-level synthesis of the literature on six groups, organized around three modes of action: influencing, decision-making and implementing. Overall, our review clearly demonstrates that participation patterns in domestic climate governance are far more complex than those suggested by the more established market failure and socio-technological transition models. While these accurately capture the prominence of political and business actors in mitigation governance, they ignore the wider range of constituencies shaping current climate politics, as illustrated by [Table 2](#), which summarizes the findings of the empirical literature.

[Table 2](#) shows that the newly emerging public support model best captures the participation patterns of contemporary climate governance. Our findings thus echo critiques of the market failure approach, highlighting its inability to capture real-world climate politics and governance (Aklin & Miltenberger, 2020; Bernstein & Hoffmann, 2019; Colgan et al., 2021). Likewise, the socio-technological transition model fails to capture the diversity and complexity of the politics involved and the broad range of actors implicated in climate governance. These conclusions support recent self-critique from transitions scholars (e.g., Köhler et al., 2019; Roberts & Geels, 2019).

While the public support model best captures the range of actors and complexity of the politics of domestic climate governance, particularly as it relates to influence, the other two models offer in-depth analysis of patterns in decision-making and implementation. In particular, the socio-technological transition model better reflects the empirical finding that both political and business actors play multiple roles in domestic mitigation governance.

Political actors are indeed decision-makers and implementers and business take on all three roles. This is not so surprising, given that climate governance is often centered on industry change and renewable energy development (Boasson et al., 2021; Hochstetler, 2020; IPCC, 2022). Missing, however, is recognition that these shifts in industry and infrastructure are unfolding in multiple local contexts, each characterized by its own set of political, private sector, and civil society stakeholders and socio-environmental histories. The market failure model captures the narrowest slice of domestic climate governance activities, in the sense that political actors and business play more roles in climate governance than expected, and other actors also participate. Still, it is noteworthy that the policy prescribed by the market failure model, carbon pricing, is steadily diffusing.

Our findings suggest the need to refine and develop the public support model. Whilst the expectation that political actors and business play all three roles in climate governance seems robust, we need more research to identify the conditions that affect when and how actors play significant roles. For example, the literature suggests that some actors who influence governance rarely act as decision-makers and implementers. It is consequently important to determine the conditions that may enable these actors to participate more extensively in climate governance.

In addition to assessing the applicability of the three models, we have also sought to *identify gaps in the literature to direct future research efforts*. Notable gaps include: the role of pro- and anti-climate organizations especially in decision-making and implementation; and more broadly the role of Indigenous peoples' groups and labor organizations and other emerging actor groups. Maybe most importantly, the existing empirical literature does not allow us to conclude if and when broad participation will hinder or enable ambitious climate governance. As implementation of domestic mitigation governance matures and climate ambition increases more empirical cases will become available to allow researchers to explore this key question.

We have identified an overall lack of systematic qualitative and quantitative comparative research on climate governance (for exceptions see: Boasson et al., 2021; Hochstetler, 2020; Mildemberger, 2020), which limits our ability to draw conclusions on the relative importance of actors across countries, modes of action, policy domains and time. For example, it may be that political actors, business and advocacy organizations behave differently in the sphere of renewable energy than carbon pricing, but due to the lack of systematic cross-issue area comparisons, we do not (yet) know whether this is the case. Moreover, domestic climate governance research is heavily biased towards a few developed countries, limiting the national political contexts for which we have comprehensive actor data. Also needed are analyses that track the evolution of climate governance over time: Will political actors accelerate emission reduction trajectories? How will business and

labor respond as the transition progresses? Will climate justice figure more prominently in implementation?

Finally, we know far too little about the relationship between the actors participating in climate governance, and the importance of networks and coalitions. A range of theoretical approaches examining inter-relationships between actors have been proposed (e.g., Boasson et al., 2021; Mildenerger, 2020; Pulver, 2017), but this research is still in its infancy. A notable gap concerns how various civic actors relate to changes in popular sentiments, and the relationship between civil society on the one hand, and voters, citizens and consumers on the other. Consequently, there is still much work to do before we gain a comprehensive understanding of who does climate governance.

## Acknowledgements

Heartfelt thanks to Sebastien Jodoin who was involved in an early iteration of this article, to Thomas Carter for his help with references and to the two anonymous referees for their helpful and constructive comments.

## Disclosure statement

No potential conflict of interest was reported by the author(s).

## Notes on contributors

*Elin Lerum Boasson* is a professor in the Department of Political Science at the University of Oslo and holds a position at the Cicero Center for International Climate Research.

*Charlotte Burns* is a professor in the Department of Politics and International Relations at the University of Sheffield.

*Simone Pulver* is an associate professor in Environmental Studies at the University of California, Santa Barbara.

## References

- Aamodt, S., & Stensdal, I. (2017). Seizing policy windows: Policy influence of climate advocacy coalitions in Brazil, China, and India, 2000–2015. *Global Environmental Change*, 46, 114–125. <https://doi.org/10.1016/j.gloenvcha.2017.08.006>
- Aklin, M., & Mildenerger, M. (2020). Special section: Domestic climate policy under anarchy prisoners of the wrong dilemma: Why distributive conflict, not collective action, characterizes the politics of climate change. *Global Environmental Politics*, 20(4), 4–26. [https://doi.org/10.1162/glep\\_a\\_00578](https://doi.org/10.1162/glep_a_00578)
- Almiron, N., & Xifra, J. (2019). *Climate change denial and public relations: Strategic Communication and Interest Groups in Climate Inaction*. Routledge.
- Astuti, R., & McGregor, A. (2015). Governing carbon, transforming forest politics: A case study of Indonesia's REDD+ Task Force. *Asia Pacific Viewpoint*, 56(1), 21–36. <https://doi.org/10.1111/apv.12087>



- Ayling, J. (2017). A contest for legitimacy: The divestment movement and the fossil fuel industry. *Law and Policy*, 39(4), 349–371. <https://doi.org/10.1111/lapo.12087>
- Backman, C. A., Verbeke, A., & Schulz, R. A. (2017). The drivers of corporate climate change strategies and public policy: A new resource-based view perspective. *Business and Society*, 56(4), 545–575. <https://doi.org/10.1177/0007650315578450>
- Bailey, C. J. (2019). Assessing president Obama's climate change record. *Environmental Politics*, 28(5), 847–865. <https://doi.org/10.1080/09644016.2018.1494967>
- Bang, G., Underdal, A. and Andresen, S. (2015). *The domestic politics of global climate change. Key actors in International Climate Cooperation*. Edward Elgar.
- Bebbington, A., & Bury, J. (2013). *Subterranean struggles: New dynamics of mining, oil, and gas in Latin America*. Austin. University of Texas Press.
- Benney, T. (2015). *Making environmental markets work: The varieties of capitalism in emerging Economies*. Routledge.
- Berardi, U. (2017). A cross-country comparison of the building energy consumptions and their trends. *Resources, Conservation and Recycling*, 123, 230–241. <https://doi.org/10.1016/j.resconrec.2016.03.014>
- Bernstein, S., & Hoffmann, M. (2019). Climate politics, metaphors and the fractal carbon trap. *Nature Climate Change*, 9(12), 919–925. <https://doi.org/10.1038/s41558-019-0618-2>
- Biggart, N. W., & Lutzenhiser, L. (2007). Economic sociology and the social problem of energy inefficiency. *American Behavioral Scientist*, 50(8), 1070–1087. <https://doi.org/10.1177/0002764207299355>
- Birch, S. (2020). Political polarization and environmental attitudes: A crossnational analysis. *Environmental Politics*, 29(4), 697–718. <https://doi.org/10.1080/09644016.2019.1673997>
- Blondeel, M., & Van de Graaf, T. (2018). Toward a global coal mining moratorium? A comparative analysis of coal mining policies in the USA, China, India and Australia. *Climatic Change*, 150(1–2), 89–101. <https://doi.org/10.1007/s10584-017-2135-5>
- Bloodgood, E., & Tremblay-Boire, J. (2017). Does government funding depoliticize non-governmental organizations? Examining evidence from Europe. *European Political Science Review*, 9(3), 401–424. <https://doi.org/10.1017/S1755773915000430>
- Boasson, E. L. (2015). *National climate policy: A multi-field approach* (1st edition). Abingdon: Routledge.
- Boasson, E. L., Leiren, M. D., & Wettestad, J. (2021). *Comparing renewables policy: Political, organizational and European fields* (1st ed.). Routledge.
- Boasson, E. L., & Tatham, M. (2022). Climate policy: from complexity to consensus?. *Journal of European Public Policy*.
- Boasson, E. L., & Wettestad, J. (2013). *EU climate policy: Industry, policy interaction and external environment* (1st ed.). Routledge.
- Boussalis, C., & Coan, T. G. (2016). Text-mining the signals of climate change doubt. *Global Environmental Change*, 36, 89–100. <https://doi.org/10.1016/j.gloenvcha.2015.12.001>
- Brannstrom, C., Gorayeb, A., de Sousa Mendes, J., Loureiro, C., Meireles, A. J. d. A., Silva, E. V. d., Ribeiro de Freitas, A.L, & de Oliveira, R.F. (2017). Is Brazilian wind power development sustainable? Insights from a review of conflicts in Ceará state. *Renewable and Sustainable Energy Reviews*, 67, 62–71. <https://doi.org/10.1016/j.rser.2016.08.047>
- Bratton, W., & McCahery, J. A. (2015). *Institutional investor activism: Hedge funds and private equity, economics and regulation*. Penn Law: Legal Scholarship Repository.

- Brulle, R. J. (2014). Institutionalizing delay: Foundation funding and the creation of U.S. climate change counter-movement organizations. *Climatic Change*, 122(4), 681–694. <https://doi-org.sheffield.idm.oclc.org/10.1007/s10584-013-1018-7>
- Brulle, R. J. (2018). The climate lobby: A sectoral analysis of lobbying spending on climate change in the USA, 2000 to 2016. *Climatic Change*, 149(3–4), 289–303. <https://doi.org/10.1007/s10584-018-2241-z>
- Brulle, R. J. (2019). Networks of opposition: A structural analysis of U.S. Climate change counter-movement coalitions 1989–2015. *Sociological Inquiry*, xx(x), 1–22. <https://doi.org/10.1111/soin.12333>
- Bulkeley, H. (2015). *Accomplishing climate governance*. Cambridge University Press.
- Bushley, B. R. (2014). REDD+ policy making in Nepal: Toward state-centric, polycentric, or market-oriented governance? *Ecology and Society*, 19(3), 34. <https://doi.org/10.5751/ES-06853-190334>
- Carbon Tracker. (2019). Carbon Tracker.
- Carter, N., & Childs, M. (2018). Friends of the Earth as a policy entrepreneur: ‘The Big Ask’ campaign for a UK climate change Act. *Environmental Politics*, 27(6), 994–1013. <https://doi.org/10.1080/09644016.2017.1368151>
- Castán Broto, V., & Bulkeley, H. (2013). A survey of urban climate change experiments in 100 cities. *Global Environmental Change*, 23(1), 92–102. <https://doi.org/10.1016/j.gloenvcha.2012.07.005>
- Castán Broto, V., & Westman, L. K. (2020). Ten years after Copenhagen: Reimagining climate change governance in urban areas. *WIREs Climate Change*, 2020(11), e643.
- Chamorel, P. (2019). Macron versus the yellow vests. *Journal of Democracy*, 30(4), 48–62. <https://doi.org/10.1353/jod.2019.0068>
- Chan, S., van Asselt, H., Hale, T., Abbott, K., Beisheim, M., Hoffmann, M., Guy, B., Höhne, N., Hsu, A., Pattberg, P., Pauw, P., Ramstein, C., & Widerberg, O. (2015). Reinvigorating International climate policy: A comprehensive framework for effective nonstate action. *Global Policy*, 6(4), 466–473. <https://doi.org/10.1111/1758-5899.12294>
- Christoff, P., & Eckersley, R. (2011). Comparing state responses. In J. S. Dryzek, R. Norgaard, & D. Schlosberg (Eds.), *The Oxford Handbook of Climate Change and Society* (pp. 431–448). Oxford University Press.
- Claeys, P., & Delgado Pugley, D. (2017). Peasant and indigenous transnational social movements engaging with climate justice. *Canadian Journal of Development Studies / Revue Canadienne d'études Du Développement*, 38(3), 325–340. <https://doi.org/10.1080/02255189.2016.1235018>
- Clarke, L., & Sahin-Dikmen, M. (2020). Unions and the green transition in construction in Europe: Contrasting visions. *European Journal of Industrial Relations*, 26(4), 401–418. <https://doi.org/10.1177/0959680120951705>
- Coady, D., Parry, I., Sears, L., & Shang, B. (2017). How large are global fossil fuel subsidies? *World Development*, 91, 11–27. <https://doi.org/10.1016/j.worlddev.2016.10.004>
- Cock, J. (2019). Resistance to coal inequalities and the possibilities of a just transition in South Africa\*. *Development Southern Africa*, 36(6), 860–873. <https://doi.org/10.1080/0376835X.2019.1660859>
- Colgan, J. D., Green, J. F., & Hale, T. N. (2021). Asset revaluation and the existential politics of climate change. *International Organization*, 75(2), 586–610. <https://doi.org/10.1017/S0020818320000296>
- Comi, A., Lurati, F., & Zamparini, A. (2015). Green alliances: How does ecophilosophy shape the strategies of environmental organizations? *Voluntas*, 26(4), 1288–1313. <https://doi.org/10.1007/s11266-014-9478-6>

- Coryat, D. (2015). Extractive politics. Media power, and new waves of resistance against oil drilling in the Ecuadorian Amazon: The case of Yasunidos. *International Journal of Communication*, 9, 3741–3760.
- Crowley, K. (2017). Up and down with climate politics 2013–2016: The repeal of carbon pricing in Australia. *WIREs Climate Change*, 8(3), e458. <https://doi.org/10.1002/wcc.458>
- Dentoni, D., Bitzer, V., & Schouten, G. (2018). Harnessing wicked problems in multi-stakeholder partnerships. *Journal of Business Ethics*, 150(2), 333–356. <https://doi.org/10.1007/s10551-018-3858-6>
- Doda, B., Gennaioli, C., Gouldson, A., Grover, D., & Sullivan, R. (2016). Are corporate carbon management practices reducing corporate carbon emissions? *Corporate Social Responsibility and Environmental Management*, 23(5), 257–270. <https://doi.org/10.1002/csr.1369>
- Downie, C. (2018). Ad hoc coalitions in the US energy sector: Case studies in the gas, oil, and coal industries. *Business and Politics*, 20(4), 643–668. <https://doi.org/10.1017/bap.2018.18>
- Dubash, N. K., Pillai, A. V., Flachsland, C., Harrison, K., Hochstetler, K., Lockwood, M., MacNeil, R., Mildenerger, M., Paterson, M., Teng, F., & Tyler, E. (2021). National climate institutions complement targets and policies. *Science*, 374(6568), 690–693. <https://doi.org/10.1126/science.abm1157>
- Dunlap, R., & McCright, A. (2015). Challenging climate change: The denial counter-movement. In R. Dunlap, & R. Brulle (Eds.), *Sociological Perspectives on Climate Change* (pp. 300–332). Oxford University Press.
- Dunlap, R., McCright, A., & Yarosh, J. (2016). The political divide on climate change: Partisan polarization widens in the U.S. *Environment: Science and Policy for Sustainable Development*, 58(5), 4–23. <https://doi.org/10.1080/00139157.2016.1208995>
- Engels, A., Knoll, L., & Huth, M. (2008). Preparing for the ‘real’ market: National patterns of institutional learning and company behaviour in the European Emissions Trading Scheme (EU ETS). *European Environment*, 18(5), 276–297. <https://doi.org/10.1002/eet.485>
- Farrell, J. (2016). Network structure and influence of the climate change counter-movement. *Nature Climate Change*, 6(4), 370–374. <https://doi.org/10.1038/nclimate2875>
- Farrell, J., McConnell, K., & Brulle, R. (2019). Evidence-based strategies to combat scientific misinformation. *Nature Climate Change*, 9(3), 191–195. <https://doi.org/10.1038/s41558-018-0368-6>
- Ferrante, L., & Fearnside, P. (2019). Brazil’s new president and ‘ruralists’ threaten Amazonia’s environment, traditional peoples and the global climate. *Environmental Conservation*, 46(4), 261–263. <https://doi.org/10.1017/S0376892919000213>
- Fisher, D. (2019). *American resistance: From the women’s march to the Blue Wave*. Columbia University Press.
- Fisher, D. R., Jasny, L., & Dow, D. M. (2018). Why are we here? Patterns of intersectional motivations across the resistance. *Mobilization: An International Quarterly*, 23(4), 451–468. <https://doi.org/10.17813/1086-671X-23-4-451>
- Fisher, D. R., & Nasrin, S. (2021). Climate activism and its effects. *WIREs Climate Change*, 12(1), e683. <https://doi.org/10.1002/wcc.683>
- Flagg, J. A., & Rudel, T. K. (2021). Uneven ambitions: Explaining national differences in proposed emissions reductions. *Human Ecology Review*, 27(1), 1. <https://doi.org/10.22459/HER.27.01.2021.02>
- Forchtner, B. (2019). Climate change and the far right. *Wiley Interdisciplinary Reviews: Climate Change*, 10(5), e604. <https://doi.org/10.1002/wcc.604>

- Forsyth, T. (2010). Panacea or paradox? Cross-sector partnerships, climate change, and development. *Wiley Interdisciplinary Reviews: Climate Change*, 1(5), 683–696. <https://doi.org/10.1002/wcc.68>
- Gebara, M. F., Fattorelli, L., May, P., & Zhang, S. (2014). REDD+ policy networks in Brazil: Constraints and opportunities for successful policy making. *Ecology and Society*, 19(3), art53. <https://doi.org/10.5751/ES-06744-190353>
- Geels, F. W. (2019). Socio-technical transitions to sustainability: A review of criticisms and elaborations of the multi-level perspective. *Current Opinion in Environmental Sustainability*, 39, 187–201. <https://doi.org/10.1016/j.cosust.2019.06.009>
- Geels, F. W., Berkhout, F., & Van Vuuren, D. P. (2016). Bridging analytical approaches for low-carbon transitions. *Nature Climate Change*, 6(6), 576–583. <https://doi.org/10.1038/nclimate2980>
- Glynn, P., Cadman, T., & Maraseni, T. (2017). *Business, organized labour and climate policy: Forging a role at the negotiating table*. Cheltenham: Edward Elgar.
- Gordon, D. J., & Johnson, C. A. (2017). The orchestration of global urban climate governance: Conducting power in the post-Paris climate regime. *Environmental Politics*, 26(4), 694–714. <https://doi.org/10.1080/09644016.2017.1320829>
- Gouldson, A., & Sullivan, R. (2014). Understanding the governance of corporations: An examination of the factors shaping UK supermarket strategies on climate change. *Environment and Planning A: Economy and Space*, 46(12), 2972–2990. <https://doi.org/10.1068/a130134p>
- Grant, D., & Vasi, I. B. (2017). Civil Society in an age of environmental accountability: How local environmental nongovernmental organizations reduce U.S. power plants' carbon dioxide emissions. *Sociological Forum*, 32(1), 94–115. <https://doi.org/10.1111/socf.12318>
- Green, J. F. (2021). Does carbon pricing reduce emissions? A review of ex-post analyses. *Environmental Research Letters*, 16(4), 043004. <https://doi.org/10.1088/1748-9326/abdae9>
- Grubert, E. (2020). Fossil electricity retirement deadlines for a just transition. *Science*, 370(6521), 1171–1173. <https://doi.org/10.1126/science.abe0375>
- Guber, D. (2017). *Partisan cueing and polarization in public opinion about climate change in Oxford Research Encyclopedia of Climate Science*. Oxford University Press.
- Gullberg, A. T. (2008). Lobbying friends and foes in climate policy: The case of business and environmental interest groups in the European Union. *Energy Policy*, 36(8), 2964–2972. <https://doi.org/10.1016/j.enpol.2008.04.016>
- Hadden, J., & Jasny, L. (2019). The power of peers: How transnational advocacy networks shape NGO strategies on climate change. *British Journal of Political Science*, 49(2), 637–659. <https://doi.org/10.1017/S0007123416000582>
- Hahn, R., Reimsbach, D., & Schiemann, F. (2015). Organizations, climate change, and transparency: Reviewing the literature on carbon disclosure. *Organization and Environment*, 28(1), 80–102. <https://doi.org/10.1177/1086026615575542>
- Hampton, P. (2018). Trade unions and climate politics: Prisoners of neoliberalism or swords of climate justice? *Globalizations*, 15(4), 470–486. <https://doi.org/10.1080/14747731.2018.1454673>
- Heikkinen, H., Ylä-Anttila, T., & Juhola, S. (2019). Incremental, reformistic or transformational: What kind of change do C40 cities advocate to deal with climate change? *Journal of Environmental Policy and Planning*, 21(1), 90–103. <https://doi.org/10.1080/1523908X.2018.1473151>
- Hill, M., & Hupe, P. (2014). *Implementing public policy: Governance in theory and in practice* (3rd ed.). Sage.

- Hindery, D. (2013). *From Enron to Evo: pipeline politics, global environmentalism, and indigenous rights in Bolivia* (1st ed.). University of Arizona Press.
- Hochstetler, K. (2020). *Political economies of energy transition*. Cambridge University Press.
- Hochstetler, K., & Kostka, G. (2015). Wind and solar power in Brazil and China: Interests, state–business relations, and policy outcomes. *Global Environmental Politics*, 15(3), 74–94. [https://doi.org/10.1162/GLEP\\_a\\_00312](https://doi.org/10.1162/GLEP_a_00312)
- Hochstetler, K., & Viola, E. (2012). Brazil and the politics of climate change: Beyond the global commons. *Environmental Politics*, 21(5), 753–771. <https://doi.org/10.1080/09644016.2012.698884>
- Houeland, C., and Jordhus, D. C. (2020, January 1–9). Solidarity tested: The case of the Norwegian Confederation of Trade Unions (LO – Norway) and its contradictory climate change policies. <https://doi.org/10.1111/area.12608>
- Huber, R. A. (2020). The role of populist attitudes in explaining climate change skepticism and support for environmental protection. *Environmental Politics*, 29(6), 959–982. <https://doi.org/10.1080/09644016.2019.1708186>
- Hultman, N. E., Pulver, S., Guimaraes, L., Deshmukh, R., & Kane, J. (2012). Carbon market risks and rewards: Firm perceptions of CDM investment decisions in Brazil and India. *Energy Policy*, 40, 90–102. <https://doi.org/10.1016/j.enpol.2011.08.064>
- Iacobuta, G., Dubash, N. K., Upadhyaya, P., Deribe, M., & Höhne, N. (2018). National climate change mitigation legislation, strategy and targets: A global update. *Climate Policy*, 18(9), 1114–1132. <https://doi.org/10.1080/14693062.2018.1489772>
- Iguchi, M. (2015). Comparative assessment. In *Divergence and convergence of automobile fuel economy regulations*. Springer.
- Ihlen, Ø. (2009). Business and climate change: The climate response of the world's 30 largest corporations. *Environmental Communication*, 3(2), 244–262. <https://doi.org/10.1080/17524030902916632>
- IPCC (2021). Glossary. <https://www.ipcc.ch/report/sr15/glossary/>.
- IPCC (2022). *Climate change 2022: Mitigation of climate change*. IPCC Sixth Assessment Report. Chapter 13: National and Sub-national Policies and Institutions. <https://www.ipcc.ch/report/ar6/wg3/>
- Jodoin, S. (2017). *Forest preservation in a changing climate: REDD+ and indigenous and community rights in Indonesia and Tanzania*. Cambridge University Press.
- Jordan, A., Huitema, D., Asselt, H., & Forster, J. (2018). *Governing climate change: Polycentricity in action?* Cambridge University Press.
- Jost, G. F., & Jacob, K. (2004). The climate change policy network in Germany. *European Environment*, 14(1), 1–15. <https://doi.org/10.1002/eet.337>
- Kashwan, P. (2015). Forest policy, institutions, and REDD+ in India, Tanzania, and Mexico. *Global Environmental Politics*, 15(3), 95–117. [https://doi.org/10.1162/GLEP\\_a\\_00313](https://doi.org/10.1162/GLEP_a_00313)
- Kenny, J. (2020). The role of political attention in moderating the association between political identities and anthropogenic climate change belief in Britain. *Political Studies*, 70(1), 3–25. <https://doi.org/10.1177/0032321720928261>
- Kim, S. E., Urpelainen, J., & Yang, J. (2016). Electric utilities and American climate policy: Lobbying by expected winners and losers. *Journal of Public Policy*, 36(2), 251–275. <https://doi.org/10.1017/S0143814X15000033>
- Kingdon, J. (1995). *Agendas, alternatives, and public policies*. Harper Collins.
- Klyza, C. M., & Sousa, D. J. (2013). *American environmental policy beyond gridlock*. MIT Press.
- Knill, C., & Tosun, J. (2012). *Public Policy: A new Introduction* (1st ed.). Palgrave Macmillan.
- Köhler, J., Geels, F. W., Kern, F., Markard, J., Onsongo, E., Wieczorek, A., Alkemade, F., Avelino, F., Bergek, A., Boons, F., Funfschilling, L., Hess, D., Holtz, G., Hyysalo, S.,

- Jenkins, K., Kivimaa, P., Martiskainen, M., McMeekin, A., & Wells, P. (2019). An agenda for sustainability transitions research: State of the art and future directions. *Environmental Innovation and Societal Transitions*, 31(January), 1–32. <https://doi.org/10.1016/j.eist.2019.01.004>
- Kooij, H.-J., Oteman, M., Veenman, S., Sperling, K., Magnusson, D., Palm, J., & Hvelplund, F. (2018). Between grassroots and treetops: Community power and institutional dependence in the renewable energy sector in Denmark, Sweden and the Netherlands. *Energy Research and Social Science*, 37, 52–64. <https://doi.org/10.1016/j.erss.2017.09.019>
- Krarup, S., & Ramesohl, S. (2002). Voluntary agreements on energy efficiency in industry – Not a golden key, but another contribution to improve climate policy mixes. *Journal of Cleaner Production*, 10(2), 109–120. [https://doi.org/10.1016/S0959-6526\(01\)00032-4](https://doi.org/10.1016/S0959-6526(01)00032-4)
- Kuyper, J. W., Linnér, B.-O., & Schroeder, H. (2018). Non-state actors in hybrid global climate governance: Justice, legitimacy, and effectiveness in a post-Paris era. *WIREs Climate Change*, 9(1), e497. <https://doi.org/10.1002/wcc.497>
- Lee, T., & Koski, C. (2012). Building green. *Review of Policy Research*, 29(5), 605–624. <https://doi.org/10.1111/j.1541-1338.2012.00579.x>
- Leiren, M. D., & Reimer, I. (2018). Historical institutionalist perspective on the shift from feed-in tariffs towards auctioning in German renewable energy policy. *Energy Research and Social Science*, 43, 33–40. <https://doi.org/10.1016/j.erss.2018.05.022>
- Li, A., Xu, Y., & Shiroyama, H. (2019). Solar lobby and energy transition in Japan. *Energy Policy*, 134, 110950. <https://doi.org/10.1016/j.enpol.2019.110950>
- Lister, J. (2018). The policy role of corporate carbon management: Co-regulating ecological effectiveness. *Global Policy*, 9(4), 538–548. <https://doi.org/10.1111/1758-5899.12618>
- Longhofer, W., Schofer, E., Miric, N., & Frank, D. J. (2016). NGOs, INGOs, and Environmental Policy reform, 1970–2010. *Social Forces*, 94(4), 1743–1768. <https://doi.org/10.1093/sf/sow031>
- Lyon, T. P. (2016). Drivers and impacts of renewable portfolio standards. *Annual Review of Resource Economics*, 8(1), 141–155. <https://doi.org/10.1146/annurev-resource-100815-095432>
- MacNeil, R. (2021). Swimming against the current: Australian climate institutions and the politics of polarisation. *Environmental Politics*, 30(1), 162–183.
- Markey, R., & Mclvor, J. (2019). Environmental bargaining in Australia. *Journal of Industrial Relations*, 61(1), 79–104. <https://doi.org/10.1177/0022185618814056>
- McCright, A., & Dunlap, R. (2011). The politicization of climate change and polarization in the American public's views of global warming, 2001–2010. *The Sociological Quarterly*, 52(2), 155–194. <https://doi.org/10.1111/j.1533-8525.2011.01198.x>
- Meckling, J., Kelsey, N., Biber, E., & Zysman, J. (2015). Winning coalitions for climate policy. *Science*, 349(6253), 1170–1171. <https://doi.org/10.1126/science.aab1336>
- Meckling, J., & Nahm, J. (2018). When do states disrupt industries? Electric cars and the politics of innovation. *Review of International Political Economy*, 25(4), 505–529. <https://doi.org/10.1080/09692290.2018.1434810>
- Mildenberger, M. (2020). *Carbon captured: How business and labor control climate politics*. The MIT Press.
- Mildenberger, M., Howe, P. D., & Miljanich, C. (2019). Households with solar installations are ideologically diverse and more politically active than their neighbours. *Nature Energy*, 4(12), 1033–1039. <https://doi.org/10.1038/s41560-019-0498-8>

- Moor, J. De, Vydts, M. De, Uba, K., & Wahlström, M. (2020). New kids on the block: Taking stock of the recent cycle of climate activism. *Social Movement Studies*, 20(5), 619–625.
- Moreira, P. F., Gamu, J. K., Inoue, C. Y. A., Athayde, S., da Cal Seixas, S. R., & Viola, E. (2019). South–south transnational advocacy: Mobilizing against Brazilian dams in the Peruvian Amazon. *Global Environmental Politics*, 19(1), 77–98. [https://doi.org/10.1162/glep\\_a\\_00495](https://doi.org/10.1162/glep_a_00495)
- Nasiritousi, N. (2017). Fossil fuel emitters and climate change: Unpacking the governance activities of large oil and gas companies. *Environmental Politics*, 26(4), 621–647. <https://doi.org/10.1080/09644016.2017.1320832>
- Niederberger, A., & Saner, R. (2005). Exploring the relationship between FDI flows and CDM potential. *Transnational Corporations*, 14(1), 1–40.
- Nordhaus, w. d. (n.d.). The GREENHOUSE EFFECT. *The Economic Journal*, ioi. Retrieved from <https://about.jstor.org/terms>
- O'Brien, K. (2018). Is the 1.5°C target possible? Exploring the three spheres of transformation. *Current Opinion in Environmental Sustainability*, 31, 153–160. <https://doi.org/10.1016/j.cosust.2018.04.010>
- Okereke, C., Coke, A., Geebreyesus, M., Ginbo, T., Wakeford, J. J., & Mulugetta, Y. (2019). Governing green industrialisation in Africa: Assessing key parameters for a sustainable socio-technical transition in the context of Ethiopia. *World Development*, 115, 279–290. <https://doi.org/10.1016/j.worlddev.2018.11.019>
- Olzak, S., Soule, S. A., Coddou, M., & Muñoz, J. (2016). Friends or foes? How Social movement allies affect the passage of legislation in the U.S. Congress\*. *Mobilization: An International Quarterly*, 21(2), 213–230. <https://doi.org/10.17813/1086-671X-21-2-213>
- Patchell, J., & Hayter, R. (2013). Environmental and evolutionary economic geography: Time for Eeg2? *Geografiska Annaler: Series B, Human Geography*, 95(2), 111–130. <https://doi.org/10.1111/geob.12012>
- Paterson, M., & P-Laberge, X. (2018). Political economies of climate change. *WIREs Climate Change*, 2018(9), e506.
- Pattberg, P., & Widerberg, O. (2016). Transnational multistakeholder partnerships for sustainable development: Conditions for success. *Ambio*, 45(1), 42–51. <https://doi.org/10.1007/s13280-015-0684-2>
- Perrow, C. (2010). Organisations and global warming. In C. Lever-Tracy (Ed.), *Routledge handbook of climate change and society* (pp. 59–77). Routledge. <https://www.routledgehandbooks.com/doi/10.4324/9780203876213.ch3>.
- Peters, P., & Tatham, M. (2022). Fueling Opposition? Yellow Vests, Urban Elites, and Fuel Taxation. *Journal of European Public Policy*.
- Pham, T. T., Di Gregorio, M., Carmenta, R., Brockhaus, M., & Le, D. N. (2014). The REDD + policy arena in Vietnam: Participation of policy actors. *Ecology and Society*, 19, 2.
- Pulver, S. (2017). Politics in the public sphere: ENGOs and oil companies in the international climate negotiations, 1987-2001. In L. Leonard, & S. N. Grovogui (Eds.), *Governance in the extractive industries: Power, cultural politics and regulation* (pp. 115–145). Routledge.
- Pulver, S., & Benney, T. (2013). Private-sector responses to climate change in the Global south. *WIREs Climate Change*, 4(6), 479–496. <https://doi.org/10.1002/wcc.240>
- Purdon, M. (2015). Advancing comparative climate change politics: Theory and method. *Global Environmental Politics*, 15(3), 1–26. [https://doi.org/10.1162/GLEP\\_e\\_00309](https://doi.org/10.1162/GLEP_e_00309)

- Räthzel, N., Cock, J., & Uzzell, D. (2018). Beyond the nature–labour divide: Trade union responses to climate change in South Africa. *Globalizations*, 15(4), 504–519. <https://doi.org/10.1080/14747731.2018.1454678>
- Reed, P. (2011). REDD+ and the Indigenous question: A case study from Ecuador. *Forests*, 2(2), 525–549. <https://doi.org/10.3390/f2020525>
- Roberts, C., & Geels, F. W. (2019). Conditions for politically accelerated transitions: Historical institutionalism, the multi-level perspective, and two historical case studies in transport and agriculture. *Technological Forecasting and Social Change*, 140, 221–240. <https://doi.org/10.1016/j.techfore.2018.11.019>
- Rosenbloom, D., & Rinscheid, A. (2020). Deliberate decline: An emerging frontier for the study and practice of decarbonization. *Wiley Interdisciplinary Reviews: Climate Change*, 11(6), 1–20. <https://doi.org/10.1002/wcc.669>
- Schifeling, T., & Hoffman, A. J. (2019). Bill McKibben’s influence on U.S. Climate change discourse: Shifting field-level debates through radical flank effects. *Organization and Environment*, 32(3), 213–233. <https://doi.org/10.1177/1086026617744278>
- Schroeder, H. (2010). Agency in international climate negotiations: The case of indigenous peoples and avoided deforestation. *International Environmental Agreements: Politics, Law and Economics*, 10(4), 317–332. <https://doi.org/10.1007/s10784-010-9138-2>
- Selby, J. (2019). The Trump presidency, climate change, and the prospect of a disorderly energy transition. *Review of International Studies*, 45(3), 471–490. <https://doi.org/10.1017/S0260210518000165>
- Snell, D., & Fairbrother, P. (2010). Unions as environmental actors. *Transfer: European Review of Labour and Research*, 16(3), 411–424. <https://doi.org/10.1177/1024258910373874>
- Sovacool, B. K., Hess, D. J., Amir, S., Geels, F. W., Hirsh, R., Rodriguez Medina, L., Miller, C., Alvia-Pavalcino, C., Phadke, R., Ryghaug, M., Schot, J., Silvast, A., Stephens, J., Stirling, A., Turnheim, B., van der Vleuten, E., van Lente, H., & Yearley, S. (2020). Sociotechnical agendas: Reviewing future directions for energy and climate research. *Energy Research and Social Science*, 70, 101617. <https://doi.org/10.1016/j.erss.2020.101617>
- Stavins, R. N. (2011). The problem of the commons: Still unsettled after 100 years. *American Economic Review*, 101(1), 81–108. <https://doi.org/10.1257/aer.101.1.81>
- Stevens, D. (2013). Green jobs? Good jobs? Just jobs? US labour unions confront climate change. In N. Räthzel, & D. Uzzell (Eds.), *Trade unions in the green economy: Working for the environment* (pp. 179–185). Routledge.
- Stevis, D. (2018). US labour unions and green transitions: Depth, breadth, and worker agency. *Globalizations*, 15(4), 454–469. <https://doi.org/10.1080/14747731.2018.1454681>
- Stevis, D., & Felli, R. (2015). Global labour unions and just transition to a green economy. *International Environmental Agreements: Politics, Law and Economics*, 15(1), 29–43. <https://doi.org/10.1007/s10784-014-9266-1>
- Stokes, L. C. (2020). *Short circuiting policy: Interest groups and the battle over clean energy and climate policy in America States*. Oxford University Press.
- Stokes, L. C., & Breetz, H. L. (2018). Politics in the U.S. energy transition: Case studies of solar, wind, biofuels and electric vehicles policy. *Energy Policy*, 113, 76–86. <https://doi.org/10.1016/j.enpol.2017.10.057>
- Sun, Peng, & Nie, Pu-yan. (2015). A comparative study of feed-in tariff and renewable portfolio standard policy in renewable energy industry. *Renewable Energy*, 74, 255–262. <https://doi.org/10.1016/j.renene.2014.08.027>



- Supran, G., & Oreskes, N. (2017). Assessing ExxonMobil's climate change communications (1977–2014). *Environmental Research Letters*, 12(8), 084019. <https://doi.org/10.1088/1748-9326/aa815f>
- Swim, J. K., Geiger, N., & Lengieza, M. L. (2019). Climate change marches as motivators for bystander collective action. *Frontiers in Communication*, 4.
- Thisted, E. V., & Thisted, R. V. (2020). The diffusion of carbon taxes and emission trading schemes: The emerging norm of carbon pricing. *Environmental Politics*, 29(5), 804–824. <https://doi.org/10.1080/09644016.2019.1661155>
- Thornton, T. F., & Comberti, C. (2017). Synergies and trade-offs between adaptation, mitigation and development. *Climatic Change*, 140(1), 5–18. <https://doi.org/10.1007/s10584-013-0884-3>
- Tjernshaugen, A. (2011). The growth of political support for co2 capture and storage in Norway. *Environmental Politics*, 20(2), 227–245. <https://doi.org/10.1080/09644016.2011.551029>
- Torraco, R. J. (2005). Writing integrative literature reviews: Guidelines and examples. *Human Resource Development Review*, 4(3), 356–367. <https://doi.org/10.1177/1534484305278283>
- Tranter, B. (2017). It's only natural: Conservatives and climate change in Australia. *Environmental Sociology*, 3(3), 274–285. <https://doi.org/10.1080/23251042.2017.1310966>
- United Nations. (2004). The concept of Indigenous peoples. Department of Economic and Social Affairs. PFI/2004/WS.1/3.
- Van Huijstee, M., Pollock, L., Glasbergen, P., & Leroy, P. (2011). Challenges for NGOs partnering with corporations: WWF Netherlands and the environmental defense fund. *Environmental Values*, 20(1), 43–74. <https://doi.org/10.3197/096327111X12922350166030>
- Wahlström, M., Wennerhag, M., & Rootes, C. (2013). Framing “The climate Issue”: Patterns of participation and prognostic frames among climate summit protesters. *Global Environmental Politics*, 13(4), 101–122. [https://doi.org/10.1162/GLEP\\_a\\_00200](https://doi.org/10.1162/GLEP_a_00200)
- Wettestad, J., & Gulbrandsen, L. H. (2017). *The evolution of carbon markets: Design and diffusion*. Routledge.
- Willis, R. (2020). The role of national politicians in global climate governance. *Environment and Planning E: Nature and Space*, 3(3), 885–903. <https://doi.org/10.1177/2514848619887464>
- Wood, P. B., & Rossiter, D. A. (2017). The politics of refusal: Aboriginal sovereignty and the Northern gateway pipeline. *The Canadian Geographer*, 61(2), 165–177. <https://doi.org/10.1111/cag.12325>
- World Bank. (2022). *State and trends of carbon pricing 2022*.
- Yildiz, Ö, Rommel, J., Debor, S., Holstenkamp, L., Mey, F., Müller, J. R., Radtke, J., & Rognli, J. (2015). Renewable energy cooperatives as gatekeepers or facilitators? Recent developments in Germany and a multidisciplinary research agenda. *Energy Research and Social Science*, 6, 59–73. <https://doi.org/10.1016/j.erss.2014.12.001>
- Zárate-Toledo, E., Patiño, R., & Fraga, J. (2019). Justice, social exclusion and indigenous opposition: A case study of wind energy development on the Isthmus of Tehuantepec, Mexico. *Energy Research and Social Science*, 54, 1–11. <https://doi.org/10.1016/j.erss.2019.03.004>