Fossil Fuel Interests in Environmental and Climate Policy: Evidence of Institutionalised Participation and Influence

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Abstract

Do fossil fuel interest groups and companies engage in systematic participation in institutions of state-society relations such as public consultations in pursuit of policy influence in the area of environment and climate? This question is informed by evidence from lobbying and energy transition literatures and by insights from policy analysis and constitutes the starting point of this dissertation. It is argued that the organisational advantages of fossil fuel actors make them likely to use public consultations in their pursuit of influence over environmental and climate issues, and that these also make them more likely to participate than groups representing diffuse interests (like environmental groups). It is also argued that fossil fuel interest groups benefiting from actor-level organisational advantages are more likely to participate than individual companies and that fossil fuel actors are generally more likely to participate when the policy being proposed entails targeted coercive measures than when it does not. The existence of this pattern of participation is assessed in two countries selected from an OECD sample using process-tracing and statistical methods applied to consultation data. In the UK, a typical case, evidence is found of fossil fuel embeddedness in the process, but not of the hypothesised pattern of systematic and strategic participation. In Denmark, a deviant case, there is insufficient evidence not only of pattern but also of embeddedness, leading to an exploration of avenues of theoretical and empirical refinement and pointing to the potential role of signals of policy commitment as a mitigator of the pursuit of influence by such actors. Arguments regarding influence-seeking patterns of participation are also translated into ones regarding patterns of political influence in search of an answer to the question of whether political-economic clout enables fossil fuel industries to negatively influence environmental and climate policy. This question is motivated by the pursuit of a framework more conducive to the identification of influence, which I construct using saliency theory as an empirical bedrock. I hypothesise that the political-economic clout of fossil fuel industries moderates governments' ability to fulfil their environmental and climate mandates, and that this effect is felt more strongly on policy instruments that entail targeted coercive measures than on ones that do not. This argument is tested on a panel of OECD data, where evidence of influence, and of the differential effect of different forms of coercive instruments, is identified.

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Summary

The starting point of this dissertation is the question of whether fossil fuel interest groups and companies engage in systematic participation in institutions of state-society relations such as public consultations in pursuit of policy influence in the area of environment and climate. This question, as outlined in Chapter 1, is informed by evidence from lobbying and energy transition literatures and by insights from policy analysis regarding the differential effect of the targeted and remote coercive mechanisms that characterise different instruments.

Chapter 2 outlines the theoretical framework that underpins this dissertation. Insights from the collective action literature and from policy analysis are further developed into a coherent framework that hypothesises a pattern of influence-seeking behaviour by fossil fuel interests. It is hypothesised that the organisational advantages of fossil fuel actors motivate them to participate in public consultations in pursuit of influence on environmental and climate issues and that their organisational features also make them more likely to participate than groups representing diffuse interests (such environmental groups and non-governmental organisations). It is also argued that fossil fuel interest groups benefit from ulterior actor-level organisational advantages relative to firms and are therefore more likely to participate than individual companies. Moreover, it is argued that fossil fuel actors are more likely to participate when the policy being proposed entails targeted coercive measures than when it entails remote coercion that is displaced onto public budgets.

Arguments regarding patterns of influence-seeking behaviour are also translated into ones regarding patterns of political influence on environmental and climate policy. It is hypothesised that as the political-economic clout of fossil fuel industries increases, so does their negative influence on environment and climate policy, and that the relationship is stronger for environment and climate policies entailing concentrated costs than for ones entailing remote costs that are displaced onto public budgets. In this project, the term "political-economic clout" refers to the political power of fossil fuel industries as derived from their economic strength. This argument is informed by evidence from the lobbying and energy transition literature, and is motivated, as described in Chapter 1, by the pursuit of a theoretical and empirical framework more conducive to the measurement of influence.

Chapter 3 presents the United Kingdom (UK) as a 'typical' case based on its central tendencies on measures of fossil fuel industry clout and of environmental and climate policy.

The purpose of this chapter is to draw relatively generalisable conclusions regarding typical influence-seeking patterns of participation in public consultations in countries with an active fossil fuel sector. This chapter combines process-tracing and statistical methods to assess the validity of the hypotheses formulated in Chapter 2 by using data on environmental and climate-related public consultations and responses in the UK. Fossil fuel interests are found to be embedded in environmental and climate-related consultations in the British context, thus passing a 'hoop' test that reinforces the validity of the main argument. The formal hypotheses formulated in Chapter 2 are in turn used as a 'smoking gun' test of the same argument. While this test is not passed, as evidence of the hypothesised pattern of fossil fuel participation is not found, the main argument remains valid, and the chapter concludes with a discussion of four 'diverse' case studies of individual consultations that suggest avenues of further theoretical and empirical refinement. These are connected to contextual factors including parties' ideological positions relative to this issue area and the extensive privatisation and liberalisation of the UK oil sector in 1977-1987.

Chapter 4 presents Denmark as a 'deviant' case based on its values on measures of fossil fuel industry clout and of environmental and climate policy. The Danish case is selected as it juxtaposes an active petrochemical sector with higher rates of environmentally-related taxes than any other country in an OECD sample. Using data on environmental and climate-related public consultations and responses in Denmark, this chapter adopts a similar approach to that of Chapter 3, combining process-tracing and statistical methods to assess whether fossil fuel interests use public consultations to engage in systematic influence-seeking participation. It is found that in the Danish case there is insufficient evidence of fossil fuel embeddedness in the sampled consultations, leading to the context-specific inference that actors from this sector do not use this institution in a systematic way to pursue policy influence. Following an overview of potential explanations for this lack of embeddedness it is posited that signals from policymakers of high levels of environmental and climate policy commitment cause fossil fuel industry actors to attribute less value to the influencing potential of public consultations, and to therefore invest less time and effort in participating in the Danish context.

As with the British case, this trend appears to be related to important contextual factors. In Denmark, these include inter-party competition for issue ownership, inter-party consensus on key elements of environmental and climate policy, and state ownership of key assets in the Danish fossil fuel ecosystem. It is argued that this indicates that signals of policy

commitment may be worth studying as factors that reduce fossil fuel interests' ability to influence environmental and climate policy.

Chapter 5 addresses the question of whether political-economic clout enables fossil fuel industries to negatively influence environmental and climate policymaking and outcomes. This question is driven by the pursuit of a framework more conducive to the identification of influence. In this chapter, I use salience theory as an empirical foundation to create a proxy for the invisible counterfactual in relation to which influence needs to be conceptualised and measured. Using this approach, I test the argument that as the political-economic clout of fossil fuel industries increases, so does their negative influence on environment and climate policy, and that the relationship is stronger for environment and climate policies entailing targeted coercive measures than for ones that do not. I perform this analysis on a panel of OECD countries for the period 1994 – 2016. Evidence is found of the influence of fossil fuel industries, which acts as a moderator of the relationship between the salience of environment and climate in political programmes and subsequent policy (which I term 'program-to-policy linkage') when policy is measured using instruments of remote coercion that displace costs onto public budgets. When policy is measured using instruments of targeted coercion that place costs on energy incumbents, program-to-policy linkage is absent, but the influence of fossil fuels persists with a direct, negative, and significant effect on the dependent variable being observed.

While these results do not perfectly match expectations, they corroborate arguments based on the role of different policy types entailing difference coercive mechanisms in structuring patterns of influence and in shaping the environmental and climate policy landscape.

The final section concludes with a discussion of findings, limitations, and implications, along with a discussion of potential avenues for future research

List of Abbreviations

APOC	Anglo-Persian Oil Company
BGC	British Gas Corporation
BNOC	British National Oil Company
BP	British Petroleum
CAC	Command and Control
CCL	Climate Change Levy
COP26	United Nations Climate Change Conference
EDF	Electricité de France
ENEL	Ente nazionale per l'energia elettrica
IPCC	Intergovernmental Panel on Climate Change
NGO	Non-Governmental Organisation
NSTA	North Sea Transition Authority
OECD	Organisation for Economic Cooperation and Development
OEUK	Offshore Energies United Kingdom
OFTEC	Oil Firing Technical Association
OGA	Oil and Gas Authority
OPEC	Organisation of Petroleum Exporting Countries
PINE	Policy Instruments for the Environment
PPL	Program-to-Policy Linkage
UK	United Kingdom
UKIFDA	United Kingdom and Ireland Fuel Distributors Association
UKLPG	United Kingdom Liquefied Petroleum Gas
UKLPG	United Kingdom Liquefied Petroleum Gas
UKOGIA	United Kingdom Oil and Gas Industry Association
UKOOG	United Kingdom Onshore Oil and Gas
UKPIA	United Kingdom Petroleum Industry Association
US	United States

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Introduction

Alongside hundreds of pages of compiled scientific evidence of anthropogenic climate change, of the increased incidence of extreme weather events, and of the potentially catastrophic consequences of these phenomena on communities around the globe, the Intergovernmental Panel on Climate Change, or IPCC, also provides an evidence-based outline of the climate mitigation practices that are to be implemented for environmental calamity to be avoided (IPCC 2022). This is accompanied by subtle but urgent warnings directed at global leaders, cautioning against short-termism and myopia in light of accumulating negative environmental externalities that the market alone is ill-equipped to address (IPCC 2022).

Central to climate mitigation, as well as to environmental protection more broadly, is a transition away from fossil fuels and towards more sustainable sources of energy. The negative externalities of the fossil fuel industry begin even before the fossil fuel is burned and continue well after: mining and drilling often result in poor water and soil quality as the land's natural geology is altered, affecting the surrounding ecosystem. Wildlife populations are harmed as large swathes of land experience noise and habitat fragmentation due to drilling. Fuel transport too is environmentally costly, posing risks such as oil spills and gas pipeline leaks. Fossil fuel combustion, in turn, doesn't only produce greenhouse gases, but also releases substances that contribute to acid rain, water pollution and waste, and to public health issues such as respiratory problems and various forms of cancer (Union of Concerned Scientists 2016).

IPCC warnings draw attention to an environmental and climate policy landscape which, despite having experienced noticeable advancement over past decades, has been remarkably slow in responding to climate and other emissions-related issues despite their incontrovertible urgency. The centrality of government to environmental – especially climate – policy has transformed the climate crisis into a political struggle, and purposive progressive policies have at intervals been slowed and stalled as a result of vehement opposition by various actors and institutions (Brulle and Norgaard 2019). This opposition was long hypothesised to be caused by an informational deficit between scientists and publics, and between experts and policymakers, but time and educational and academic advancement on the topic have revealed the inadequacies of an explanation of climate-

related beliefs, attitudes and behaviours based exclusively on knowledge (Suldovsky 2017). Brulle (2020) contends that this lag in environmental and climate policy is due not to informational gaps, but to vested interests that actively oppose policy change in pursuit of continued political and economic gain.

> Despite their knowledge of climate science, a number of corporations and trade associations involved in the production or use of fossil fuels, acting in coordination with conservative think tanks, foundations, and public relations firms, have mounted a long-term effort to oppose action to mitigate carbon emissions. (Brulle 2020, 328)

This echoes an established literature on energy transitions which points to carbon lock-in as a force that perpetuates the political and economic dominance of fossil fuel industries (Unruh 2000). These fossil fuel industries, in their role as energy incumbents, slow down energy transitions towards more sustainable growth models (Aklin and Urpelainen 2013; Hess 2013), and increasingly seek to do so via purposive business and industry involvement in the political arena (Falkner 2008). These arguments make sense not only in light of theories of path dependence, but also in that of the logic of collective action (Olson 1956), according to which concentrated (and wealthy) interests face lower organisational barriers than diffuse ones, regardless of the depth of their grievance or the moral legitimacy of their stance.

An established literature points to the well-funded fossil fuel lobby as the source of industry influence, particularly in the United States (US), where several key findings paint a picture of highly organised and professionalised advocacy efforts by an industry that leverages its ample financial resources to bias the policy process against green transitions. Fossil fuel, transportation and utilities companies and their related trade associations, for instance, are found to be the biggest spenders on climate change lobbying in the US Congress between 2000 and 2016, spending more when the political salience of climate issues increases and outspending environmental organisations and the renewables sector by a ratio of 10:1 (Brulle 2018). A similarly salience-driven expenditure pattern is identified for advertising purchases for corporate promotion, with companies like ExxonMobil, Shell, ChevronTexaco, British Petroleum, and ConocoPhillips spending nearly $3.6 billion on advertising between 1986 and 2020 and increasing their advertising spend when the perceived likelihood of climate legislation being passed grows as a product of increased media or political focus on climate change (Brulle 2020).

Such advocacy efforts are found to interfere with processes of positive policy feedback and path dependence that, all things being equal, generally facilitate the reinforcement and

expansion of policies over time, resulting in a climate policy conflict that slows down policy changes that are required as part of a broader green transition (Stokes 2020). The conflictual nature of advocacy in this policy area is particularly evident in the tactics employed by the fossil fuel industry, which have historically included scientific disinformation and climate denial, wherein groups and think tanks opposed to key pieces of climate legislation such as the Kyoto Protocol have benefited from corporate funding from the likes of ExxonMobil (Supran and Oreskes 2017; Grasso 2019).

These findings reveal the severe limitations experienced by environmental activists, especially those engaged in science-driven informational activism, pointing to asymmetric interest representation and to a biased policymaking process that systematically stymies much-needed environmental and climate legislation. They also prompt concerns related to the democratic credentials of a policymaking process driven by vested interests operating behind closed doors (Edwards 2016). This underscores the empirical need to transcend narratives of inherently secretive lobbying activities by looking at all possible avenues of advocacy and attempted influence, including more transparent, though less studied, institutions of state-society relations such as written public consultations. Inasmuch as institutions facilitate the effectiveness interest group advocacy, written public consultations, which have become a staple of most liberal democracies, and which are becoming increasingly transparent as a result of the influence of the Organisation for Economic Co-operation and Development (OECD), constitute a plausible avenue of fossil fuel influence and therefore worthy of further study.

While the literature on lobbying is vast and well-established, that on public consultations is relatively small but budding, and the behaviour of fossil fuel interest groups and companies in the public consultation setting is as yet unstudied. This is the gap which chapters 2-4 of this dissertation aim to address by answering the following question: *do fossil fuel interest groups and companies engage in systematic participation in environmental and climate-related public consultations in pursuit of policy influence?*

Chapter 2 constitutes the theoretical backbone of this dissertation. It situates this question within the broader literature and presents a theoretical outline that underpins the expectations regarding, and analysis of, fossil fuel industry participation in public consultations as carried out in subsequent chapters. It starts by arguing that the institution of public consultation is not merely an exercise in routine transparency or window-dressing, but rather an opportunity for stakeholders to influence policy through their participation. This argument is buttressed

with references to the literature on organized interests, central to which is the idea that different types of groups and actors in society can influence public policy.

This chapter also applies to public consultations Schattschneider's axiomatic (1960) assertion that 'the flaw in the pluralist heaven is that the heavenly chorus sings with a strong upper-class accent', which implies not only that interests do matter, but also that some interests matter more than others. Using this axiom as a point of departure, I explore the literature on patterns of participation by different actor types in public consultations, according to which the level of concentration of interests has a strong hand in shaping their ability to participate and, consequently, their ability to bias interest representation. In doing so, I discuss research that relies on the frequency of participation of different actor types as a measure of bias in interest representation – an approach which hinges on the idea that diversity and extent of participation are key to understanding different actors' potential to secure influence at the national level via embeddedness in the political process (Binderkrantz and Rasmussen 2015).

Using the literature on actor- and system-level determinants of participation in public consultations as a point of departure, I construct two sets of hypotheses regarding the patterns of fossil fuel interest participation in public consultation in order to assess in subsequent chapters the degree to which these actors participate systematically with an eye towards influence.

Firstly, I hypothesise that fossil fuel industry actors enjoy organisational advantages that make them dominant among other consultee actor types (such as environmental non-governmental organisations (NGOs) and action groups), and that this is especially true of fossil fuel interest groups, which face even lower barriers to mobilisation than companies.

Secondly, I contend that the different coercive structure of different types of policies that are consulted upon compounds bias by creating differential incentives for participation by fossil fuel industries, resulting in higher participation rates for consultations on instruments entailing targeted coercion of specific groups than for other types. This argument relies on insights from the literature on policy instruments, according to which instrument types can be classified according to their coercive structure, or the extent to which an instrument's coercive means or costs can be described as 'targeted' or 'remote'. In this respect, I follow Lowi's (1972) seminal observation that choices about how to apply the power of the state can matter more than goals the state pursues (Nicholson 2002).

This is the most novel theoretical contribution presented in this dissertation. Environmental and climate policy instruments are highly heterogenous in their coercive structures, even when their goals do coalesce: they range from subsidies, tax credits and infrastructural projects – distributive instruments funded by public budgets – to 'Command and Control' (CAC) regulation and carbon taxes – targeted regulatory instruments that extract funds from the actors whose behaviours they aim to change. I hypothesise that interest groups and individual companies from the fossil fuel industry experience these varied coercive mechanisms as differential incentives for participation in public consultations, and, in accordance with an influence-seeking and strategic pattern of behaviour, are more likely to participate in public consultations when they concern the proposal of an instrument entailing targeted coercive measures than when they concern that of an instrument entailing remote coercive ones.

Finally, this chapter elaborates on the theoretical implications of the above-described pattern of influence-seeking behaviour by building on the concept of 'influence' itself, extending arguments about actor behaviour into arguments regarding the effects of such behaviour on the policy landscape and on policy outcomes. This extension of the theoretical framework is grounded by the following question: *does political-economic clout enable fossil fuel industries to negatively influence environmental and climate policymaking and outcomes?* I use the term 'political-economic clout' (Hughes and Urpeleinen 2015) to conceptualise the political power of fossil fuel industries as derived from their material economic wealth. It is also worth noting that my use of the word 'negative' (here and in the rest of my writing) is not normative in purpose, but merely descriptive of directionality.

The core principle of state-society relations is that policymakers can acquire knowledge and legitimacy from stakeholders through varied forms of interaction, while stakeholders get a say, or 'influence', in the policymaking process (Bouwen 2003: Coen 2007; Bunea and Thomson 2015). Given that stakeholder participation is largely shaped by, and consequently, biased as a result of the logic of collective action (Olson 1965), groups representing concentrated interests (such as fossil fuel industry actors) benefit from organisational and financial advantages that, besides making them more active participants in institutions of state-society relations (such as public consultations), also make them more effective in their pursuit of influence when they interact with the state in both informal and formal institutional settings.

I also build on arguments concerning the differing coercive and incentive structures entailed by policy types and what these mean for actors from the fossil fuel industry, and for environmental and climate policy. Central to this theoretical discussion, once again, is Lowi's (1972) literature-defining observation that policies can and do shape politics. My final contention is that, because targeted regulatory instruments (such as CAC regulation and carbon taxes) extract funds from the actors whose behaviours they aim to change, they provide actors from the fossil fuel industry with a greater incentive to mobilise against their implementation and, consequently are more negatively influenced by the political-economic clout of the fossil fuel industry than instruments with remote coercive mechanisms (such as subsidies, tax credits, and infrastructural projects).

Chapter 2 concludes with an overview of the research design structure adhered to in the empirical chapters This includes the mixed-method case studies presented in Chapters 3 and 4, in which evidence of influence-seeking patterns of behaviour is sought, and the large-$_n$ analysis carried out in Chapter 5, in which arguments regarding the extent of the influence stemming from such patterns of behaviour are tested. It presents the data on the basis of which cases are selected and provides a justification of case selection. Two countries are selected for further study in Chapters 3 and 4 on the basis of cross-national data on environmental and climate regulation and on the power of fossil fuel industries.

The United Kingdom (UK) is presented as a 'typical' case exemplifying central tendencies on both these variables among developed economies. The purpose of this choice of case is to draw somewhat generalisable conclusions regarding the importance given to the institution of public consultation by actors from the fossil fuel industry, and regarding their patterns of participation within it, in countries with an active petrochemical sector. Denmark, on the other hand, is selected as a 'deviant' case which combines central tendencies on the size of fossil fuel industries relative to the broader economy with exorbitantly high values on measures of environmental and climate. This challenges theoretical expectations and provides opportunities for theoretical and empirical refinement. The data used for case selection are later used in the large-$_n$ analysis presented in Chapter 5 as measures of the explanatory and dependent variables, and therefore act as a common denominator of all three empirical chapters.

Chapter 3 provides a full account of my analysis of fossil fuel industry participation in environmental and climate-related consultations in the UK, with a focus on data collection and description, and on how these data are used to test the arguments formulated in Chapter

2. This chapter also fleshes out the broader UK context to take into account the spectrum of contextual variables that may potentially affect the rates at which fossil fuel industry actors participate in environment- and climate-related public consultations. The research design adopted in this chapter combines tools from the process-tracing toolbox with statistical analysis of data on UK consultations and on the responses they elicit. I design a 'hoop' test through which the validity of my argument regarding the use of public consultations by fossil fuel stakeholders can either be reinforced or eliminated altogether by assessing whether or not these actors are indeed embedded in the consultation process. I then test my hypotheses regarding the preponderance of fossil fuel actors relative to other groups and regarding their differential participation by policy type with the intention of obtaining 'smoking gun' evidence of the petrochemical sector's active pursuit of influence through the institution of public consultation. While fossil fuel interests are found to be highly embedded in UK public consultations, I fail to find 'smoking gun' evidence of the hypothesised influence-seeking pattern of participation. My results indicate that company-level resources may be more important than group-level resources in determining patterns of engagement in the British fossil fuel context, possibly because of factors such as the liberalisation and privatisation of the fossil fuel sector. To aid in my interpretation of these results, I subsequently select a set of diverse consultations from the analysed sample that capture variation along both consultation type and fossil fuel industry response rates, allowing me to gain further insight into the hypothesised relationships and to propose avenues of theoretical and empirical refinement.

Chapter 4, in turn, presents Denmark as an outlying or 'deviant' case in terms of the same data on environmental and climate regulation and on the size of fossil fuel industries. While Danish data exhibit central tendencies on the size of fossil fuel industries relative to the broader economy, Denmark's values on measures of environmental and climate regulation are higher than those of any other OECD country. This sets Denmark apart from other advanced liberal democracies and challenges theoretical expectations regarding the relationship between fossil fuel interests and environmental and climate policy. The nature of the fossil fuel sector in Denmark, especially in terms of revenues and importance to the broader economy, leads to the expectation that the patterns of participation exhibited by actors from the petrochemical sector in Danish public consultations should be roughly similar to those seen in the UK case. Uncommonly high rates of environmental and climate regulation, however, as well as the progressive implementation of an avant-garde

constellation of environmental and climate policies in Denmark, serve to mitigate these expectations.

In order to explore the possible implications of this apparent paradox, I employ an empirical approach parallel to that developed in the previous chapter, once again combining process-tracing tools with statistical ones in my study of environmental and climate-related public consultations and responses in Denmark. I flesh out the broader Danish context to account for institutional variables that may potentially affect the rates at which fossil fuel industry actors participate in environment- and climate-related public consultations. After this and following a complete account of data collection and of the general trends observed therein, I seek evidence of fossil fuel industry group and company embeddedness in the consultation process. I use this as a 'hoop' test to ascertain whether my general argument is valid or dismissible in the Danish context, before proceeding to test my earlier hypotheses regarding patterns of fossil fuel stakeholder participation. Finding that there is in fact insufficient evidence of fossil fuel stakeholder embeddedness in environmental and climate consultations in the deviant Danish case, I dedicate the final part of my discussion to the implications of my findings.

In doing so I address the questions of why the fossil fuel industry fails to fully avail of the participatory opportunities afforded by public consultations in this context, as well as whether this trend is connected to the apparent lack of fossil fuel influence over Denmark's environmental and climate policy. I conclude that signals of policy commitment, reinforced by party dynamics and competition for issue ownership, along with state ownership of key assets in the Danish fossil fuel landscape, have a hand in shaping incentives for participation in consultations on environment and climate.

It is one thing, however, to point to a pattern of influence-seeking behaviour by fossil fuel incumbents in institutions of state-society relations, and altogether another to argue that this ultimately translates into political influence on environmental and climate, especially as the conceptual and empirical contours of 'influence' remain highly fluid. Despite evidence of fossil fuel incumbents reinforcing path dependence and slowing down a shift towards sustainable energy use, extant work on energy transitions ultimately struggles with the identification of political influence due to the difficulties associated with empirical measurement of this ubiquitous concept. Conceptually, 'influence' denotes an invisible counterfactual to which reality is compared – a description of the influence of *A* on the actions of *B* implies that the actions of *B* would have been different in *A*'s absence (Dahl

1957; Lukes 1974 Lowery 2013) – but empirically this counterfactual is seldom observable. Cross-national studies come close to mitigating this problem, but, as yet, the literature on the relationship between petrochemical industries and environmental and climate policy is characterised by a gap insofar as it fails to provide a measure of what environmental and climate policies might look like in the absence of industry influence.

The question of influence is addressed directly in Chapter 5, where I build on insights from the literatures discussed in Chapter 2 to more fully flesh out a theoretical and empirical framework that aspires to better understand and capture the political influence of fossil fuel industries. From the energy transition literature, I borrow evidence of carbon lock-in and of systematic fossil fuel resistance to green transitions, and from the collective action literature, I borrow arguments relating to the organisational strengths that enable fossil fuel influence. Most importantly to my influence-capturing endeavour, however, I also lean on mandate and salience theory, from which I borrow the premise that there exists a linkage between political programs and policy, whereby governments keen to avoid electoral sanction strive to be true to the mandate that gets them elected. The contribution presented in this chapter is twofold. It not only aims to address the 'influence' gap in the energy transition literature, but also aims to fill a gap in the mandate literature, which focuses on institutional determinants of mandate fulfilment without accounting for the influencing role played by vested interests in the policymaking process.

Combining these insights, I hypothesise that the political-economic clout of fossil fuel industries acts as a negative moderator (that is to say, a variable that weakens an existing relationship between two others) of environmental and climate program-to-policy linkage (or PPL) and test my argument on a panel of OECD countries for the period 1994 – 2016. Finally, by using two different measures of environmental and climate policy – environmentally-related taxes and environmentally-related subsidies – I test the argument that the negative influence of the political-economic clout of fossil fuel industries is also contingent on policy coercive structure.

In doing so, I obtain compelling evidence of a variegated pattern of fossil fuel influence that shapes the environmental and climate policy landscape in such a way as to place the cost of energy transitions on public budgets instead of incumbent fossil fuel industries.

2

Patterns of Participation in Public Consultations

A well-established literature has come a long way in outlining the role that the fossil fuel lobby plays in attempts at shaping environmental and climate policy. While lobbying is a highly context-dependent and therefore heterogenous industry (Baumgartner 2007; Klüver 2011), its nature as a form of advocacy 'directed at government/legislators and carried out by actors within or on behalf of a group or organization' (Somerville & Ramsey 2012, p. 47), gives rise to core traits that are transferable across jurisdictions and political systems. Key among these is the relative obscurity of lobbying activities which are most often carried out away from the public eye (Edwards 2016) despite the recent shift towards lobbying transparency registers (Bunea 2019; Dinan 2021). Also essential to an understanding of lobbying practices is their capital- and resource-intensive nature across different sectors in a context of increased professionalisation (Lahusen 2023) and political engagement, with industries such as pharmaceuticals and health products spending an average of $233 million per year on lobbying the US federal government via campaign contributions (Wouters 2020). It is through this lens that studies on efforts by the fossil fuel lobby to influence environmental and climate policy must be viewed.

Several key findings from this literature are startlingly illustrative. It is found, for instance, that the largest lobbying expenditures on climate change in the US Congress between 2000 and 2016, which totalled over $2 billion (and amounted to 3.9% of all lobbying expenditures), came from the energy sector, with fossil fuel, transportation, and utilities companies, as well as their associated industry groups, outspending environmental organisations and the renewable energy sector by a ratio of 10:1 (Brulle 2018). The same study finds that lobbying expenditures by the fossil fuel, transport and utilities sector appear to be strongly driven by the salience of climate issues within the legislature and the perceived likelihood (measured via the number of bills introduced, and that of Congressional hearings held) of the passage of consequential climate legislation.

It is also found that major oil companies engage in vast and systematic corporate promotional efforts via large advertising purchases: between 1986 and 2020, ExxonMobil, Shell, ChevronTexaco, British Petroleum, and ConocoPhillips spent nearly $3.6 billion on advertising, of which 61% after 2006, when the political salience of climate change and related issues increased in the US (Brulle 2020). This forms part of a broader trend wherein

companies spend more on advertising purchases for corporate promotion when there is increased political attention being dedicated to the issue (increasing the perceived likelihood of regulation or other legislation aimed at changing the energy status quo) or increased negative media coverage on climate change increases. Such efforts at sophisticated propaganda have the goal of increasing corporations' perceived legitimacy and of making less likely the implementation of legislation that would change or undermine their current business practices or market dominance (Brulle 2020).

Evidence corroborating the role of the fossil fuel lobby in the clean energy and climate policy conflict across US states is found by Stokes (2020), whose analysis draws attention to the conditionality of the processes of positive policy feedback and path dependence through which policies are generally believed to reinforce themselves and expand over time. Examining cases where clean energy policies have been reversed or where policy conflict remains ongoing despite key wins for energy transitions, the author finds that ambiguity at the enactment stage is leveraged by energy incumbents to weaken policies once they reach the implementation stage, and that certain interest groups leverage their informational and financial advantage to keep lobbying legislators directly for policy change even after implementation. Such efforts are exacerbated by the oil sector's contentious history with climate denial, as exemplified by ExxonMobil's efforts from the 1980s until the 2000s, which included opposition to regulatory proposals targeting global warming, funding for groups and think tanks opposed to the Kyoto Protocol and support for research aimed at undercutting the scientific consensus on anthropogenic climate change (Supran and Oreskes 2017; Grasso 2019).

Collectively, these findings carry important implications on three different levels: normative, theoretical and empirical. From a normative perspective, they prompt concerns regarding the severe constraints faced by science and climate change advocacy efforts in a lobbying environment where, especially in the case of the US, environmental organisations are dramatically outspent by groups with a vested interest in delaying or preventing energy transitions. This asymmetry is likely to be reflected in a distortion of information flows, biasing the policymaking process and making less likely the provision of what is effectively a global public good. Normative concerns related to the democratic process also arise as a consequence of the likelihood of systematic bias and in light of the obscure nature of the lobbying industry and the lobbying process itself, which takes place behind closed doors and excludes the general population (Edwards 2016). From a theoretical standpoint, findings from the literature on the fossil fuel lobby beg further elaboration on the possible extent

(especially as articulated in terms of patterns of participation, rather than expenditures), drivers (beyond issue salience), and consequences (in terms of policy outcomes and influence) of this demonstrable bias in interest representation in the field of environmental and climate policy.

Perhaps most importantly, at an empirical level, they point to the importance of going beyond narratives of industry influence filled with images of legions of well-paid lobbyists working behind closed doors in smoke-filled rooms: a simplistic portrayal of influence as obscure and sinister is neither verifiable nor empirically useful. On the contrary, the relative secrecy in which interest group advocacy takes place, with all its anti-democratic dangers, requires us to exhaust all avenues of observable interaction between the fossil fuel industry and policy makers. Literature on the fossil fuel lobby has come a long way in demystifying the ways in which lobbying expenditures help further petrochemical interests in the conflict over climate policy but, insofar as interests require institutions to be effective, the deployment of influence-seeking strategies in other institutions of state-society relations is remarkably understudied. An investigation of patterns of fossil fuel interest participation in public consultation is therefore not only timely, but also opportune.

This chapter provides a review of the literature on the determinants of participation in public consultation processes, with special focus on actor-level variables derived from seminal theories of collective action, as well as on system-level determinants including pluralism and corporatism.

It applies these insights to environment- and climate-related public consultations, focusing on the organisational, technical and financial advantages of fossil fuel actors to propose a testable framework of patterns of influence-seeking fossil fuel industry participation. This framework allows me to argue that stakeholders from the fossil fuel industry are well-positioned to take advantage of the influence-seeking opportunities afforded by public consultations and that this translates into their dominance among respondents, particularly relative to public interest organisations such as environmental associations.

It also allows me to argue that the aforementioned organisational and technical advantages are especially observable in fossil fuel industry groups, which experience even lower barriers to effective advocacy than individual fossil fuel companies, and to formalise the expectation that fossil fuel industry groups are more dominant in environment- and climate-related public consultations than fossil fuel companies.

This chapter also goes a step further, however, by looking towards the explanatory power of policy means, rather than mere policy goals. By placing proposed policy type at the centre of the interactions between governments and fossil fuel industries which this chapter describes, I flesh out a theoretical framework according to which the coercive mechanism of a proposed policy (i.e., who pays for it) serves as a determinant of fossil fuel participation in consultations, and, by extension, of the sector's influence on climate policy. I hypothesise that as a result of the incentive structures of different policy types, and of the information and resource advantages exhibited by concentrated interests, which equip them to handle the complexities and manage the information flows surrounding technical legislation, fossil fuel interests are not just more likely than others to participate in environment- and climate-related public consultations, but also more likely to be dominant among participants in consultations on policies for which they will have to pay. These policies entailing targeted coercion by the state incentivise participation by fossil fuel interests in a manner that policies entailing remote coercion that displaces funding onto public budgets rather than the regulated entity, do not.

Finally, I argue in this chapter that the 'Who pays?' principle helps us better understand not only who participates strategically in environment- and climate-related public consultations, but also which kinds of environmental and climate policies are more likely to be implemented in the long run. In other words, I extend my argument on patterns of participation into one of patterns of influence. By building on the central idea that policies can and do shape politics, I conclude my theoretical discussion with the expectation that, as a result of such strategic and influence-seeking patterns of behaviour, the political-economic clout of fossil fuel industries negatively influences environment and climate policymaking, and that this negative influence is likely to be stronger for policies entailing targeted coercive mechanisms than for ones entailing remote ones.

The final section lays out the essential components of a research design outline that anchors subsequent empirical chapters, with special emphasis on key hypotheses and case selection. The overarching purpose of this chapter is to formulate theoretically-grounded hypotheses that will enable me to answer the two different but related questions at the heart of this dissertation. The first question is that of whether fossil fuel interest groups and companies engage in systematic participation in environmental and climate-related public consultations in pursuit of environmental and climate policy influence. The second, whether this systematic influence-seeking pattern of participation results in negative, systematic, and differential influence by fossil fuel industries on environment and climate policy outcomes.

The Consultative Process:
Determinants of Participation

Contemporary liberal democracies have created several mechanisms aimed at increasing the agency of voting publics in the policymaking process with an eye towards enhancing the legitimacy of policies and policy outputs. The institutionalisation of such mechanisms underscores the idea that although interest groups drive and exert influence, they necessitate institutions and access to be truly effective in advancing their goals (Windhoff-Héritier 2019). Such mechanisms may take various forms, including, but not limited to, conferences, advisory committees, and written (often online) public consultations. The real extent of the power that is placed in the hands of voting publics and special interests via such means is doubtless debateable and is likely to vary depending on the consultative method that is employed. At the very least, these methods may provide citizens and stakeholders with information on the policymaking process (a modest virtue, but a virtue nonetheless), while at most, they may theoretically endow voters and other actors with influence or control over policies and their outcomes (Gastil 2021).

Written public consultation constitutes the focus of the next part of this dissertation. By 'written public consultation' I refer to the process in which a government or other executive agency publishes a call for citizen and stakeholder feedback on policy proposals (OECD 2010) by publishing a written notice of proposed legislation to which relevant stakeholders, or even private citizens, are invited to respond via a written comment that is later taken into account by legislators at subsequent stages of the legislative process. Although names attributed to this consultative method may vary (the process is known as 'public notice and comment' in the US, for instance), as may country-specific practices surrounding rules of access and participation, OECD influence has contributed towards greater standardisation across liberal democracies.

Although written public consultation is but one of an array of methods through which governments drive engagement between society and the legislative process, it has not only become one of the more important tools in the policymaking arsenal, but has also (partly as a result of OECD influence) become highly institutionalised, systematised, and documented. As evidenced by the nascent body of research on the topic, this makes it an ideal investigative subject for political scientists keen on understanding the intricacies of state-society relations. Research on this institutionalised form of state-society interaction highlights the importance of the written consultation as a means of obtaining the views of external stakeholders

notwithstanding its complementarity with other deliberative or personal and informal channels of interest group influence on the policymaking process.

Nevertheless, there is no consensus as to the relationship between written consultative practices and interest group influence, and even less agreement surrounding the extent to which participatory exercises enhance the legitimacy and equitability of the policymaking process. In her discussion of the 'Lands for Life' consultation in Canada, for instance, Ballamingie (2010), suggests that the exercise, which was also the largest participatory experiment in Canadian political history, was largely symbolic. She argues that the process was designed 'to give the illusion of consultation while reaching a predetermined outcome' (Ballamingie 2010), empowering industrial representatives over First Nation peoples, conservationists, and other relevant external actors, and ultimately producing an outcome not conducive to climate integrity. This raises two questions related to participation in consultative exercises which will be reprised in my theoretical discussion of participation by petrochemical stakeholders in environmental and climate-related public consultations. Firstly, to what extent is participation in such exercises meaningful, as opposed to representative of routine transparency or window-dressing? And, secondly, are all actors equally able to leverage the participatory process to their advantage, or are some groups better equipped than others to utilise access in such a way as will heighten their influence over the legislative process?

Both these questions underscore the importance of understanding the patterns of actor participation in the consultative process. These patterns are complex as a result of the variety of factors that produce them, which include actor-level variation affecting participatory resources, system-level variation affecting participant selection and access, and consultation-level variation affecting differential incentives for participation by different actors and groups.

Actor-level variation is primarily relevant in terms of the logic of collective action, which unsurprisingly underpins most of the literature on interest group activity and influence. The range of actor types that may be expected to participate in consultative processes includes, but is not limited to, private citizens, private companies, professional, business and industry associations and groups, and public interest and identity groups. There is therefore considerable variation in the goals, organisational structures, resources and expertise of these potential participants, all of which may be expected to affect the likelihood and effectiveness of their contribution to the consultative exercise.

The first and perhaps most important point of distinction among actors is between interest groups and the rest. Interest groups, which themselves represent an agglomeration of various actors with similar interests and goals, benefit from a number of advantages in this process. Not only is it easier for the state to identify relevant interest groups than specific individuals or companies, but it is also more efficient for them to do so given that a large number of actors are included in the consultative process with the participation of even a relatively small number of interest groups (Irvin and Stansbury 2004). Moreover, consulting with interest groups is likely to be perceived by the public as being a more legitimate endeavour than that of consulting directly with specific companies – an act that may be perceived as discriminatory or corrupt. Furthermore, the high level of specialisation, organisation and concentration of expertise exhibited by interest groups stands in sharp contrast to the more particularistic interests of individuals and companies. The latter are altogether less suited to, and less focused on lobbying and other activities surrounding state-society relations than interest groups that have an organisational setup that is often designed to facilitate the articulation of collective interests in such a way as to influence the policymaking process. It is therefore not surprising that the rate of interest group participation in written consultations is found to be higher than that of other actor types (Rasmussen 2015).

Heterogeneity across interest group types, however, is also a factor of great importance in explaining patterns of participation. Crucially, one must distinguish highly specialised groups such as those representing concentrated professional, industrial or labour interests, from others representing more diffuse interests, such as those relating to social or identity causes. The variables effecting this distinction are by and large those that underpin the logic of collective action, notably resources and concentration of interests (Olson, 1989). It is found that groups representing specific industries, businesses, and professions generally benefit from greater resources than other group types, both in terms of funding - where capital-intensive industry and business groups are at a distinct advantage (Beyers and Arras 2019) - and in terms of sector-specific expertise and clout, where trade unions too excel at interacting with the state and with proposed legislation, especially when they effectively mobilise their rank-and-file (Erne and Blaser 2018). These findings indicate that bias in interest representation is typically resource-driven, which constitutes a fact of some significance given that diversity in interest representation is what prevents policy capture by vested interests via the overrepresentation of one-sided views.

Although evidence of the relationship between resources and influence tends to be hard to pin down beyond the anecdotal, we have sufficient evidence to conclude that group resources

are positively correlated to access to the formal and informal channels that enable influence to occur. The act of responding to a written consultation may not inherently require ample finances, but resources enable a higher degree of organisation, professionalisation and expertise, all of which enable groups to optimise participation, especially when they are backed by the economic clout of the industries they represent. Moreover, organisations representing businesses, industries and trades which are generally at the epicentre of regulations and legislative proposals, enjoy informational advantages as a result of their familiarity with the environment of economic conduct (Pagliari and Young 2014) and are inherently incentivised to provide consulting agencies and regulators with information that is biased in their favour (Coglianese et al. 2004). Consequently, although public consultation has great potential for more effective policymaking and increased perceptions of legitimacy, actor-level characteristics which shape actors' propensity to participate in the consultative exercise can also increase risks of bias and of policy capture by concentrated industry, business and professional interests (Kwak 2014).

It is also worth noting here that a sizeable literature focuses on the distinction between so-called 'insider' and 'outsider' groups, according to which certain interest groups enjoy a privileged position in state-society relations relative to others (Maloney et al. 1994; Page 1999; Binderkrantz 2005; Dür and Mateo 2016). This privilege arises partly as a result of the structure of state-society relations (levels of corporatism, discussed below, are likely to matter), and partly as a result of the greater financial, human, informational or economic resources possessed by certain groups. According to the bulk of this literature, 'insiders' are able to pursue 'insider' (or, more accurately and descriptively, 'direct') strategies that leverage direct interaction with bureaucrats and political parties. 'Outsiders', on the other hand, unable to enjoy the same privilege, fall back on 'outsider' (or 'indirect') strategies centred around media campaigns and member mobilization.

From this academic perspective, written public consultations are to be regarded as an 'insider' or 'direct' administrative strategy through which the more privileged and resourceful groups exert their influence on the policymaking process (Lundberg 2013). There is evidence that insider and outsider strategies, far from being mutually exclusive, can and are used by many groups complementarily (Page 1999). This literature, however, reinforces the expectation that groups representing concentrated interests are more likely to participate in the consultative process than groups representing diffuse interests, particularly given the finding that indirect strategies are often a direct choice of diffuse groups that face competition in attracting and retaining members (Walker 1991; Grant 2000).

While actor-level variation is crucial to our understanding of participation in consultations, system-level variation in the structure of state-society relations must also be taken into consideration (Rasmussen 2015). A sizeable literature explores the commonplace distinction between corporatist and pluralist systems and argues that corporatist institutions have a particularly strong hand in shaping patterns of interest group behaviour, and, by extension, policy decisions (Blom-Hansen 2001).

'Corporatism' denotes a political system in which the state fosters and utilises a strong relationship between itself and the organised interests clamouring for influence over the policymaking process, in some cases leading to certain groups enjoying privileged access to the decision-making process (Schmitter 1974; Kenworthy 2003; Streeck and Kenworthy 2005). Characteristic of such systems is the institutionalisation and incorporation of interest groups at various stages of policy design and implementation. Such institutionalisation may take different forms, including, but not limited to, official lists of relevant stakeholders, as well as direct outreach from decisionmakers to key non-state actors. This categorisation stands in contrast to the 'pluralist' system ideal, wherein the state distances itself from stakeholders in order to keep the interest group arena more open and equal, theoretically preventing certain groups from gaining excessive influence via privileged access to the policymaking process (Truman 1951; McFarland 2007).

There are several reasons why one might expect key differences in the structure of state-society relations to cause differential patterns of actor participation to emerge. A crucial component of the corporatist ideal is utilitarian (Adams 2019). By forming a strong relationship with the most important interests in a given policy area, the state aims not only to integrate their key input within policy, but also to achieve its most efficient and effective formulation. Pluralist systems, in contrast, are based on the idea of free and unfettered access for all actors, ranging from the highly organised to the more *ad hoc* – an ideal which may be achieved to the detriment of efficiency and effectiveness. While the normative merits of these ideals are not relevant to this discussion, these structural and ideational differences have important implications for stakeholder participation.

Close bonds between state and society actors often entail a more limited, but also more clearly structured and identifiable (and countable), universe of stakeholders than might occur in a comparable pluralist scenario (Jordan and Halpin 2012). As a consequence of this, neo-corporatist systems tend to be characterised by a higher share of organised interest group

participation (relative to other stakeholder types) than are neo-pluralist systems, where individuals and companies constitute a larger share of participants (Rasmussen 2015).

Also of note is the same author's related finding that the structure of state-society relations in corporatist systems tends to deepen, rather than alleviate, the degree of privilege of so-called 'corporatist' interest groups within the system. In other words, those interest groups that already benefit from organisational and financial advantages in their pursuit of influence, such as groups representing industrial and occupational interests, are more privileged in neo-corporatist systems than in neo-pluralist ones. This is not altogether surprising, given that it is primarily the economic arena that is prioritised in corporatist systems – an arena characterised by strong occupational and business interests. Moreover, a stakeholder's importance and influence within the corporatist system relies on their being identifiable and easily contactable and therefore enmeshed within the institutionalised state-society structure. Organised labour and business interests that are easy to locate are consequently at an advantage as a result of being more easily located by the state than other groups.

Despite the apparently stark contrast between these two labels, however, they are more useful as descriptors of ideal types at opposite ends of a normative theoretical spectrum than they are as classifiers for real-world political systems, as none have ever perfectly matched the blueprint of either. The more modern labels of 'neo-corporatist' and 'neo-pluralist' are more useful in capturing the nuance of political systems that, more often than not, are on a sliding scale of stakeholder institutionalisation – but evidence increasingly points towards a decline of corporatism across Europe since the late 20th century. This includes evidence of waning interest group involvement in policy preparation by committees, of the growing importance of lobbying parliament, and of the strengthened position of citizen group in former corporatist strongholds such as Norway, Sweden, and Denmark (Lewin 1994; Blom-Hansen 2000; Lindvall and Sebring 2005; Lundberg 2013; Lundberg 2015; Rommetvedt 2017).

When applied to the context of fossil fuel interests in environmental- and climate-related consultations, these varied insights yield a number of expectations of influence-seeking patterns of participation. The petrochemical sector is characterised by a high level of concentration of interests, with a relatively small number of companies producing the fuel on which developed economies overwhelmingly rely. This high level of concentration makes actors from the fossil fuel industry *a priori* more likely to participate in the consultation

process than groups representing diffuse interests, such as public interest organisations. The sector is also defined by high levels of technical and professional expertise that add to organisational advantages distinctive informational ones. It is also characterised by high revenues that facilitate the funding of all influence-seeking endeavours, including lobbying and institutional participation, enabling the employment of well-paid professionals in the legal, political and research fields. In the context of environmental and climate-related public consultations, where long-sighted supply-oriented policymaking is intrinsically targeted towards energy transition, fossil fuel obsolescence, and replacement by renewables, the incentive for actors from the fossil fuel industry to participate is not only strong but almost existential. In this context, participation becomes a means of reinforcing informational advantages by biasing the consultative process with one-sided information, paving the way towards policy capture. I therefore hypothesise that:

H_{1a}: Actors from the fossil fuel industry are more likely to respond to environmental public consultations than public interest organisations.

Further to the expectation that actors from the fossil fuel industry are *a priori* likely to be overrepresented in public consultations on the environment and climate relative to public interest organisations, these insights from the literature also allow me to make a further, more refined argument on the distinction between fossil fuel industry groups and fossil fuel companies. I argue that fossil fuel industry groups, in their role as representatives of a collection of actors with analogous interests and goals that are frequently in direct opposition to those of environment and climate policy, benefit from the ulterior concentration of already-concentrated interests and capital. This further lowers the barriers to mobilisation via professionalisation and targeted deployment of expertise, streamlines the particularistic interests of a collection of actors, and makes their participation in environment- and climate-related consultations even more likely than that of fossil fuel companies.

Moreover, fossil fuel industry groups benefit from privileged access to the state, for which the prioritisation of interest groups represents an opportunity to expedite the consultation and policymaking process, as well as a means of increasing the perceived legitimacy of the process in the eyes of the public. From the point of view of fossil fuel actors, too, collective mobilisation via industry groups, rather than the individual company level, allows the presentation of a more legitimate, less surreptitious method of interaction with the state. Where participation by individual companies may be perceived as a covert attempt at biasing or capturing the environment or climate policy process, participation by industry groups is

more likely to be perceived as part and parcel of a licit exchange of information. The relevance of such concerns is all the more acute in view of the fossil fuel sector's contentious history with misinformation and climate denial, which has tarnished the reputations of individual well-known companies. I therefore hypothesise that:

H_{1b}: Fossil fuel industry groups are more likely to respond to environment- and climate-related public consultations than fossil fuel companies.

While actor-level and system-level explanations constitute the bulk of the literature on differential rates of actor participation in public consultations, it is proposed here that the type of policy that is being consulted up on also matters. A vast body of literature on policy instruments indicates that not all policy tools can be painted with the same brush, and that although governmental goals are important, the selection of means by which they are pursued has a profound effect on their attainment. I build on this literature to argue that different instruments with different mechanisms of coercion provide different incentives for consultative participation across interest group types, and further postulate that this, in turn, shapes the environment and climate policy landscape by undercutting attempts at regulation in contexts characterised by established fossil-fuel interests.

Proposed Policy Types: Differential Incentives for Participation

Given that the classification of different policy instruments has occupied a prominent role in various policy-related fields of research, it would be remiss of us to ignore the ways in which the proposed use of different tools of government might encourage or discourage stakeholder participation in institutions of state-society relations.

Government constitutes not only the selection of specific goals, but also the employment of various resources at the state's disposal to facilitate their attainment. These resources, referred to as policy instruments' (Howlett 2009), 'governing instruments' (Trebilcock and Hartle 1982) and 'policy tools' (Schneider and Ingram 1990), amongst other terms, have been the subject of both political science and economics research, where their classification according to the different mechanisms they entail has taken various forms over decades of study. These conceptual developments have helped consolidate our understanding of the ways in which governments navigate and select from the different tools at their disposal in order to maximise not only their potential effectiveness, but also their political feasibility.

The most fundamental distinction among policy instruments lies between those oriented towards substantive goals and those with procedural intentions. The former aim directly to change patterns of goods and service production and consumption within society, while the latter seek to alter internal governmental workings and the processes by which policy goals are articulated and effected (Howlett 2017). The range of goals underpinning substantive policy instruments is unsurprisingly vast, speaking to a plethora of motivations within the scope of socio-economic change. By targeting any one of the myriad ways in which goods and services are produced, distributed and consumed in society, the goals of such tools may range from the more prosaic, like health and safety regulations, to the more grandiose, like peace and climate sustainability.

Despite this vast variation in political goals and the many combinations of instruments that may be employed simultaneously in their pursuit, the common denominator of all substantive instruments is the alteration of individual or group behaviours, and, by extension, of socio-economic topography. By penalising certain behaviours via regulation and incentivising others via subsidisation, for instance, governments attempt, albeit with varying degrees of success, to guide societies towards their desired goals. The effect of procedural instruments on the production, distribution and consumption of goods and services, in contrast, is at most indirect (Howlett 2018). While the establishment of public consultation processes may be regarded as a procedural innovation, for example, climate policy proposals that inherently target socio-economic change may not. The rest of this discussion will therefore focus on variation among substantive policy instruments.

It is useful to underscore Lasswell's seminal (1958) observation that public policy is comprised not only of government goals but also of government means, indicating not only that the former cannot be attained without the latter, but also that the effects of different means on the pursuit of a given goal may be differential. While early attempts at conceptual definition either veered towards the excessively general or leaned on policy fields as a shortcut to schematisation, emphasis in the literature soon moved towards the importance of instrument type, with the likes of Salomon (1981) pointing out that instrument selection should be regarded as a conscious choice with real implications for the success of governmental programs. If then, instrument selection matters so much to policy, it becomes worthy of analysis in its own right. Although rational calculation likely constitutes a component in this selection, the exercise may surely not be described as a purely technical or apolitical one, especially if the policy goals involved entail a significant reconfiguration of established socio-economic patterns (Peters 2002).

The development of an effective understanding of the mechanisms underlying instrument selection, however, requires first and foremost a clear taxonomy of said instruments beyond the substantive and the procedural. Several such attempts have been made (Kirschen 1974; Hermann 1982), but none have gone as far in transcending sector-based inventories as Theodore Lowi's (1962, 1972) Cushman-inspired schema. Within this framework, key to the classification of policy tools is the scope of coercion employed by the government in pursuit of a given goal. The extensive influence of this relatively parsimonious system of classification can be seen in subsequent attempts at an improved taxonomy of policy instruments, in which levels of government coercion remain essential to categorisation (Elmore 1978; Balch 1980; Doern 1981; Tupper and Doern 1981; Doern and Phidd 1983).

Although Lowi's seminal framework is based on what he terms the 'likelihood' and 'applicability' of coercion, it is perhaps more economical and contemporary to think of it as a system based on the distribution of the coercive burden, or of the costs and benefits entailed by a given policy instrument. Where 'distribution' is operationalised as being either targeted (concentrated) or remote (diffuse), analysis of costs and benefits yields the 2x2 table below (figure 2.0), where policy instruments are either distributive, constituent, regulatory or redistributive.

An instrument may be described as distributive when goods or services are provided from which only their direct recipients benefit, while 'the coercive element is displaced onto the general revenue system' (Lowi 1972): that is to say when benefits are (relatively) concentrated but costs are remote. Subsidies, tax credits and infrastructural projects, amongst others, fall under this heading. Within the realm of climate policy, distributive tools including grants, soft loans and tax exemptions are frequently used to promote the consumption of sustainable products over unsustainable ones, to speed up the attainment of climate-related goals (and usually terminating the subsidy program once its goal is reached), or to facilitate access to capital for innovative climate technologies that may otherwise be considered too risky by investors.

		Benefits	
		Concentrated	*Diffuse*
Coercion (Cost)	*Targeted (Concentrated)*	**Redistributive** Energy taxes that vary by industry	**Regulatory** CAC, carbon taxes, removal of fossil fuel subsidies
	Remote (Diffuse)	**Distributive** Green subsidies, soft loans, tax exemptions	**Constituent** Establishment of climate agencies, educational campaigns

Fig. 2.0: Policy types, including examples from climate policy

While sometimes excluded from descriptions of Lowi's schema on account of its relative difference to other instrument types, that of constituent policy must be included in this classification given its centrality to national and transnational democratic institutions. Constituent policies may in a sense be described as meta-policies, and bear conceptual resemblance to aforementioned procedural policies insofar as they deal with the formulation of laws and the establishment of institutions of executive power. The concepts are, however, far from interchangeable, as Lowi's (1972) constituent tools may range from the establishment of new agencies to propaganda and educational campaigns, all of which entail remote costs and diffuse benefits. Thus, both the establishment of independent climate agencies and the diffusion of pro-sustainability campaigns and messaging may be regarded as constituent.

An instrument may be described as regulatory when it imposes coercive measures on targeted groups in order to change their behaviour, thus benefiting the many. Lowi's (1972) taxonomy provides examples of regulation like the elimination of substandard goods and of fraudulent advertising, where the targeted coercion – diffuse benefit dynamic is easily observed. In climate policymaking, however, regulation is somewhat more complex and diverse, ranging from CAC regulation to market-based instruments such as emissions taxes (Lamperti et al. 2015). CAC is the most direct form of climate regulation, and thus most precisely fits Lowi's typology. Emissions and procedural standards constitute fine examples of regulatory instruments that punish non-compliance with negative (financial or judicial) sanction, and CAC instruments have been particularly effective in the resolution of problems surrounding the climate issue of ozone depletion. However, the enforcement of CAC policies becomes less feasible, and even prohibitively expensive, as the complexity and scale of climate issues increases, and most modern climate issues are less clearly defined than the sanction of chlorofluorocarbons, as a result of which market-based instruments are becoming more popular. Although traditionally associated with distributive goals, taxation as *regulation* is increasingly chosen instead of CAC, with instruments such as carbon taxes combining the flexibility of market-based instruments with the concentrated costs and regulatory intent characteristic of CAC.

Redistributive policies can be described as instruments of targeted coercion as they entail concentrated costs while providing concentrated benefits. As the keystone of modern welfare states, redistribution is intended to mitigate wealth inequality by extracting resources from one group and transferring them to another. Unlike with distributive policies, government sanction is in this instance not generalised but targeted, and criteria of eligibility for

beneficiaries are also more narrowly defined. Although conceptually distinct from regulatory instruments, redistributive tools may in a sense be regarded as another side of the same coin, not only because regulations are often layered in such a way as to punish some subgroups more than others, but also because revenues extracted from fines and taxes are likely to be used to fund redistributive endeavours (Ebert 2007). Insofar as a policy is likely to have winners and losers, one might even go as far as to say that all regulation aims at some form of redistribution. This theoretical connection between regulation and redistribution is equally important within the field of climate policy, where, for instance, energy taxes sometimes vary by industry, penalising some more than others, and revenues are often used to mitigate labour costs within industries that are prioritised (Ebert 2007).

This breakdown is essential if we are to understand how the coercive mechanisms of different proposed policies presents potential public consultation participants with different incentives for involvement.

I posit that the 'Who pays?' principle helps better understand who participates in environment- and climate-related public consultations. I argue that the likelihood of special interest overrepresentation increases when the policy in question is designed to target a specific group of special interests with a coercive burden, having it bear the cost of a strategy designed for general benefit, rather than displacing it onto public budgets. Consequently, not only are special interests *a priori* more likely than others to participate in public consultations: they are even more likely to participate in public consultations on policies designed to target them with an explicit coercive burden.

Whether a given proposed climate policy is paid for by the taxpaying public or by the industry being sanctioned is therefore of vital importance. Fossil fuel industries are crucial actors in climate policy. On the one hand, distributive policies like subsidies and soft loans are proliferating as governments aim to reshape the demand side of energy consumption by bolstering renewables. On the other, regulatory (and often redistributive) policies remain essential to curbing carbon-lock-in in a landscape that is still dominated by coal, oil and gas (which themselves benefit from vast financial support from governments).

Although these instruments ultimately share the goal of sustainability, their differing coercive mechanisms make them far from politically interchangeable, and I posit that their proposal in a consultative forum elicits very different reactions from fossil fuel industries as a result. Even when the long-term aim is to grow the renewable market share, fossil fuel

interests are not likely to use the consultation process to vociferously oppose the introduction of policies akin to green subsidies when they are paid for by public budgets. Policies of which fossil fuel interests will bear the cost, however, such as strict procedural standards, carbon taxes, moratoria or the removal of state subsidies on fuel exploration, are likely to attract greater participation from said interests as they use the consultation process to preserve their institutionalised advantage. I therefore hypothesise that:

H_2: Actors from the fossil fuel industry are more likely to respond to environmental- and climate-related public consultations when the policies being proposed entail targeted coercive mechanisms than when they entail remote coercive mechanisms that are displaced onto public budgets.

It is worth noting that while I expect fossil fuel industry groups to respond to environment- and climate-related public consultations at a higher rate than fossil fuel companies, as articulated in H_{1a} and H_{1b}, I have no reason to believe that one actor type is more or less likely than the other to be affected by the differential incentives stemming from variation in policies' coercive mechanisms.

From Patterns of Participation to Patterns of Influence

I expand the above framework by extending the argument about patterns of participation into one about patterns of influence, using the 'Who pays?' principle not only to understand who is more likely to participate in environment- and climate-related public consultations and under which circumstances, but also which kinds of environmental and climate policies end up being implemented or not in the long run.

The key idea being presented here, that policies can (and do) shape politics, is not in itself new. Lowi (1968, 1972) himself designed his framework with the intention of explaining historical changes in the direction and dynamics of US politics, highlighting the point that policy choices condition the avenues through which state power is effected. In this regard, his contribution is twofold. The first is that a more meaningful approach to policy analysis comes not from a focus on policy goals, but from a focus on choices as to 'the ways in which the power of the state is made manifest' (Nicholson 2002). While issues matter, especially in terms of the formation of a coalition to back specific policy goals, their salience remains largely rhetorical short of a political decision as to how to direct the state's coercive power in pursuit of specific aims. Secondly, conscious choices concerning instrument selection, rather than being incidental to the policymaking process, have the power to shape politics

by determining which actors will engage with the state, in which arena, and with what level of success, thus promoting policy analysis to the level of predictive political science. In other words, policy analysis enables predictions as to not only as to which actors are more likely to engage with the policy process and under which circumstances, but also as to which actors are more likely to be *influential* in their advocacy and with what effect on the state itself. The importance of these conceptual contributions can be seen, amongst others, in more recent studies that have attempted to apply this same principle to understand how policy cost structure (i.e., the distribution of costs and benefits) affects the policy influence (i.e., success rate) of supranational institutions beyond the US, such as the European Parliament and the European Commission (Majone 1994; Rasmussen and Carroll 2014).

Policy decisions must by definition entail an element of coercion. Where policies aim to change the behaviour of specific individuals, state coercion is targeted towards the individual in the form of identification, monitoring, and (generally economic) sanction. Where they aim to change the environment of conduct, coercion is applied at a systemic level, affecting the interests of large groups of people. The variation in incentives arising from a choice between these forms of coercion is quite clear. Faced with the prospect of targeted coercion (i.e., policy choices for which they will have to pay), groups have a strong incentive to mobilise to safeguard their interests and to get as close as possible to the locus of decision making to facilitate their advocacy efforts. Faced with the prospect of remote coercion, however, (i.e., policy choices that displace costs onto public budgets), the actors most likely to prevail are not those that oppose the policy goal in principle, but political parties or other actors with a vested interest in logrolling. In terms of environment and climate policy, this means that while instruments of targeted coercion like emissions taxes are likely to elicit fossil fuel interest mobilisation and dominance, instruments of remote or diffuse coercion like subsidies on renewables are likely to reinforce political party dominance and advocacy by groups with a vested interest in retaining the benefits that those instruments would grant them, such as renewable energy companies and their trade associations.

This dynamic is likely to be exacerbated by a number of auxiliary factors. Concentrated interests are generally also better equipped than their diffuse counterparts in terms of resources and expertise, and this improves their ability to engage with the technical details of regulatory proposals in the face of an immediate coercive threat (Broscheid and Coen 2007). Firms and highly professionalised industries also benefit from a strong information advantage, meaning they often know more about the behaviours, processes, and products being regulated or sanctioned than even policymakers do (Erickson et al. 2017).

Consequently, not only are special interests *a priori* more likely than others to participate in public consultations, and more likely to participate in public consultations on policies designed to target them with an explicit coercive burden: they are also more likely, as a result of coming to the fight better armed, to be successful in exerting their influence on such policies than parties representing diffuse interests.

When governments change policy direction in such a way as to pose a threat to incumbents, or when they venture into issue areas likely to entail controversy or socio-economic conflict (as is the case with green transitions), distributive policy strategies are highly appealing as they reduce perception of coerciveness by displacing it onto the general tax burden and therefore minimise the potential for political conflict with powerful incumbents (Nicholson 2002). Such strategies, however, are not completely devoid of risk. Overreliance on distributive mechanisms entails a separation of costs from benefits and an added burden on taxpaying publics. Results of distributive strategies are not as easily identified as those of regulatory ones, and the potential for misuse arises from their accessibility. Most importantly, however, distributive strategies often result in the establishment of connections between the state and the clientele benefiting from the continuation of distributive instruments. This means that once an entitlement programme is created, it becomes exceptionally hard to dismantle even when it is no longer efficient or requires reform (Nicholson 2002). This has the potential to transform politics in that issue area into networks of patronage.

This entails a number of relatively clear implications for the influence of fossil fuel industries on environment and climate policy. The first is that environment and climate policy increasingly revolve around the necessity for a green transition in the energy sector. This implies a transition away from fossil fuels and constitutes an existential threat for the fossil fuel sector. This threat motivates the sector to organise and mobilise against environment and climate policy and is magnified when the policies being proposed entail targeted coercive measures for the fossil fuel sector. As outlined in previous sections, this engenders a pattern of influence-seeking participation contingent on policy type.

Moreover, the way in which fossil fuel interests are structured, characterised as it is by a concentration of interests, of professionalisation, of expertise, and of capital, enables them to engage more effectively with the state than other actors, especially when the policies being proposed entail targeted coercive measures for the fossil fuel sector. When the policies being proposed are distributive in nature, on the other hand, entailing coercive measures that are

displaced onto the taxpayer, the incentive for fossil fuel industries to participate (or, indeed, influence) is not as strong, allowing other actors, such as political parties and groups representing renewables, to dominate the policy process and create networks of entitlement that are hard to dismantle. This transforms a pattern of participation into one of influence, whereby fossil fuel industries negatively influence environment and climate policy heterogeneously across policy types, with the negative influence having a stronger effect on policies entailing targeted coercive measures (e.g., regulation, carbon taxes) than on policies entailing diffuse coercive measures (e.g., renewable energy subsidies).

This leads me to propose the following hypothesis, which will be revisited and more fully fleshed out in chapter 5:

H_3: As the political-economic clout of fossil fuel industries increases, so does their negative influence on environment and climate policy, but the relationship is stronger for environment and climate policies entailing targeted coercive measures than for ones entailing remote coercive measures that are displaced onto public budgets.

Research Framework and Case Selection

The next chapters apply this theoretical framework and test its resulting hypotheses in two standalone quantitative case studies on fossil fuel interest participation in public consultations and in a large-$_n$ quantitative analysis of the influence of fossil fuel industries on environmental and climate policy across OECD countries.

The study of public consultations, on which cross-country data are unavailable, entails a judgement call as to which countries are to be prioritised and studied. I follow up this theoretical framework with two quantitative case studies of public consultations in the UK and Denmark, which are selected following an overview of data on different forms of environmental and climate policy across countries and over time and on the political-economic clout of fossil fuel industries.

Because of my theoretical focus on the dichotomy between environmental and climate policy types with different coercive mechanisms, the data used in the case selection process are chosen on the basis of their effectiveness in capturing this conceptual distinction.

For a bird's eye view of instruments of targeted coercion, following the categorisation laid out in figure 2.0, I use OECD Policy Instruments for the Environment (PINE) data on environmentally-related taxes as a percentage of GDP, where environmentally-related taxes

are defined as ‘any compulsory, unrequited payment to government levied on tax bases deemed to be of environmental relevance, i.e., taxes that have a tax base with a proven, specific negative impact on the environment’ (OECD 2017). This measure yields 610 observations for the period 1994 -2016, with environmentally-related taxes averaging around 2.5% of GDP across OECD country-years. As can be seen in figure 2.1, these observations are relatively normal in their distribution, but Denmark in particular stands out as an outlier at the highest end, while countries like UK, Ireland and the Czech Republic, on the other hand, sit at the centre of the distribution.

For a holistic perspective of policies entailing remote coercion where cost is displaced onto the general budged, I use PINE data on environmentally-relate subsidies, where ‘A subsidy is environmentally motivated if it reduces directly or indirectly the use of something that has a proven, specific negative impact on the environment. It can take many forms: VAT exemptions on electric cars, feed-in tariffs on renewable energy generation, tax credits for environmentally relevant investment, or provision of public funds for nature conservation projects’ (OECD 2017). This measure produces 185 observations averaging around 267.8 million Euros across OECD country-years for 1994-2016.

For a comprehensive measure of the political-economic clout of fossil fuel industries, I use World Bank data on natural resources rents as a percentage of GDP, which capture the resources that constitute this sector’s base of power in its hypothesised influence-seeking endeavours (Simon 1953). This variable provides the total of oil rents, natural gas rents, coal rents, mineral rents, and forest rents (World Bank 2022), producing 588 observations averaging at 0.96% of GDP.

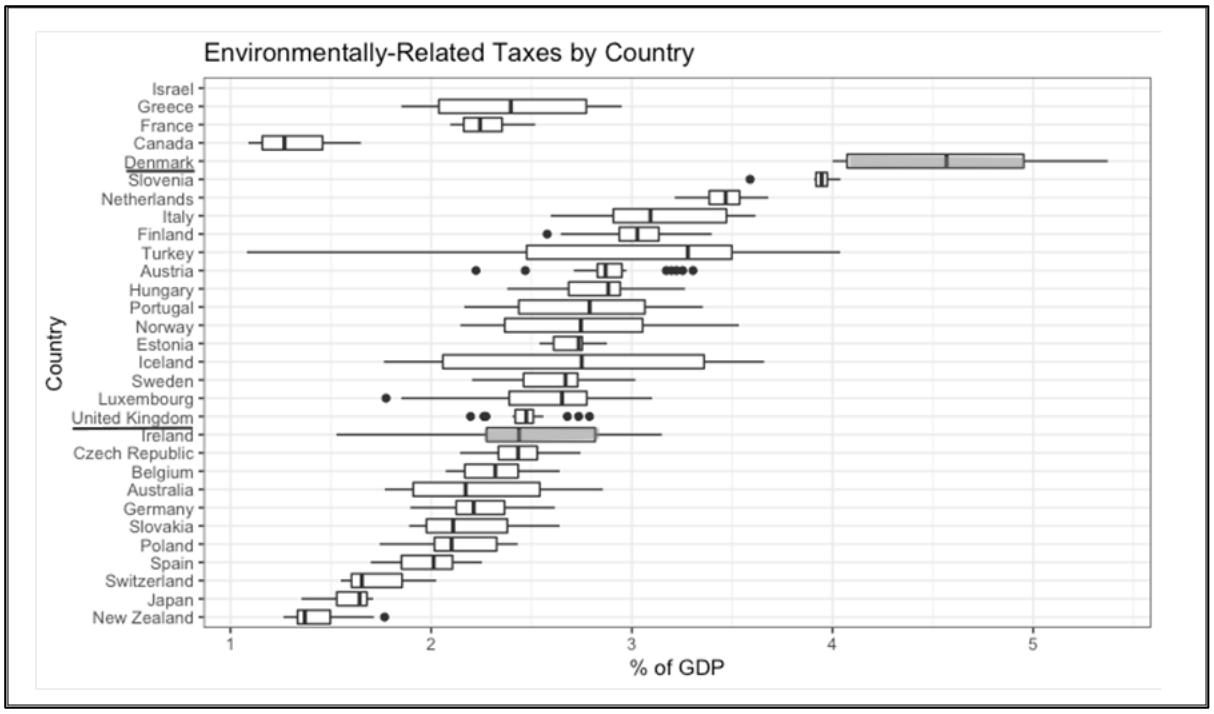

Fig. 2.1: Distribution of Environmentally-Related Taxes (% of GDP) by country - all data vs. UK and Denmark

As seen in table 2.0, the UK represents central tendencies on these key variables, with average values of natural resource rents as well as both measures of environmental and climate policy instruments, all falling within 1 standard deviation of the mean. This makes the UK an ideal choice for study as a 'typical' case (Seawright and Gerring 2008) that represents the broad patterns of influence at the heart of my research question. It is also worth noting that while average UK values of natural resource rents are close to the median, they are considerably higher than the overall median of 0.27% of GDP (a meaningful number given the non-normal distribution of this variable), signifying a fossil fuel sector possessing sufficient political-economic clout as should be observable within the theoretical parameters of the theoretical framework I propose. The UK also has a strong tradition of public consultation (OECD 2010), fostering a culture of transparency around the practice and providing a wealth of open-source data for further study.

On the other hand, the data also indicate that Denmark constitutes an outlying or 'deviant' case suitable for theoretical and empirical exploration (Seawright and Gerring 2008). While Denmark's average values on natural resource rents are situated in the central part of the overall distribution, its average level of environmentally-related tax revenues is very high compared to the rest (as illustrated by figure 2.1 and table 2.0), at the high end of the upper quartile, challenging my theoretical expectations and indicating that there are more facets to the relationship between fossil fuel interests and climate policy than have been explored

theoretically here. As with the UK, public consultations are a long-standing Danish institution (OECD 2010), documentation of which is in the public domain and therefore analysable.

Variable	Mean	Std. Dev.	UK avg.	Denmark avg.
Environmentally-Related Taxes (% GDP)	2.524	0.737	2.470	4.552
Environmentally-Related Subsidies	267.846	398.628	109.722	75.338
Natural Resource Rents (% GDP)	0.946 (median 0.27)	1.984	0.752	1.082

Table 2.0: Summary statistics employed in case selection - all data vs. UK and Denmark

Chapter	Hypotheses Tested	Methods and Objectives
3	*H_{1a}: Actors from the fossil fuel industry are more likely to respond to environmental public consultations than public interest organisations.* *H_{1b}: Fossil fuel industry groups are more likely to respond to environment- and climate-related public consultations than fossil fuel companies.*	- Mixed-methods 'typical' case study (UK) combining process-tracing methods with statistical analysis. - Identification of a 'typical' pattern of influence-seeking participation by fossil fuel industries and their associated industry groups.
4	*H_2: Actors from the fossil fuel industry are more likely to respond to environmental- and climate-related public consultations when the policies being proposed entail targeted coercive mechanisms than when they entail remote coercive mechanisms that displace costs onto public budgets.*	- Mixed-methods 'deviant' case study (Denmark) combining process-tracing methods with statistical analysis. - Exploratory objective: If fossil fuel industries engage with consultative avenues, why does this not translate into influence on Danish policymaking? If they do not engage, why do they fail to do so, and is this trend connected to the apparent lack of fossil fuel influence over Denmark's environmental and climate policy?
5	*H_3: As the political-economic clout of fossil fuel industries increases, so does their negative influence on environment and climate policy, but the relationship is stronger for environmental and climate policies entailing targeted coercive mechanisms than for ones entailing remote coercive mechanisms that are displaced onto public budgets.*	- Large-$_n$ analysis of environment and climate policy in OECD countries between 1994 and 2016. - Identification of a pattern of fossil fuel industry influence on environmental and climate policy.

Table 2.1: Research Framework: Hypotheses, Methods and Objectives

The same data used in case selection are also used in the large-$_n$ analysis of H_3, which is presented in Chapter 5 with the objective of identifying a pattern of fossil fuel industry influence on environmental and climate policy. In this way, the data used in all three empirical sections, as well as the theoretical framework presented in this chapter, unify the diverse elements of this dissertation. Table 2.1 presents a progression of all the hypotheses addressed in Chapters 3, 4 and 5 and highlights the diverse, but interconnected objectives that I aim to fulfil.

3

Public Consultations as an Avenue of Influence: The United Kingdom as a Typical Case

As of 2021, the UK ranks 21st among global oil producers with 772,000 barrels produced per day, and 17th among global oil exporters at over $13 billion in export revenue (US Energy Information Administration 2022) – a position reflective of the size and strength of the fossil fuel sector in country where the first onshore oil well was drilled in 1895. As emphasised by a House of Commons report on the oil sector (2017), all policynsurrounding this industry takes into account not only the requirements of British consumers, or even the salience of climate issues, but also its central role in the national economy. Notwithstanding the downward trend experienced by UK fossil fuel producers in terms of extraction and exports in the face of an increasingly competitive market, oil rents amounted to 0.3% of UK GDP in 2020 (World Bank 2021), and the sector as a whole employed upwards of 120,000 individuals in 2019, with UK-based petroleum giant BP alone employing over 65,000 individuals (Sönnichsen 2022). It is consequently through this lens that the UK government's attempts at regulating this sector must be regarded within the scope of environmental and climate policy.

Companies are permitted to explore and extract oil and gas from designated areas or 'licensed blocks' after obtaining a block-specific license from the North Sea Transition Authority or NSTA (formerly the Oil and Gas Authority or OGA) and completing a number of technical requirements. Although onshore fields are operational across England and Scotland, offshore fields on the UK Continental Shelf produce 98% of all British oil and gas. Large multinationals like BP, Total, Chevron and others are involved in the vast majority of field developments and operations; however, smaller petrochemical firms are often part-owners of individual fields, resulting in a complex constellation of companies and actors that compete, coexist, and collaborate across different sections of the North Sea (House of Commons 2017). Clair oil field, for instance, among the largest in the North Sea and Europe, is sprawled over six licensed blocks and is operated by BP in partnership with Shell, ConocoPhillips and Chevron (Offshore Energy 2018).

Recent trends in the global energy market have not been beneficial to the UK fossil fuel sector, as a dip in commodity prices has undercut oil and gas revenues across UK firms. Part of this strain is due to some extent to a form of first mover disadvantage, as UK refineries

are primarily designed to produce petrol rather than diesel – the latter being not only in higher and increasing demand, but also produced more competitively by new entrants to the energy market. The UK fossil fuel landscape is most notably characterised by a misalignment between supply and the evolution of domestic demand as a result of a widespread shift to diesel in cars and to other forms of power generation in households. Despite high rates of UK petroleum production, it therefore remains reliant on (primarily Norwegian) oil and gas imports and remains a net importer despite the size of its exports. Although this asymmetry is partly mitigated by trade, it exacerbates the competitive pressures faced by UK energy producers (House of Commons 2016).

Simultaneous developments in shale exploration, pioneered in the US and yet to be matched elsewhere, have further compounded the downward trend in fuel prices, and have permitted US producers to penetrate some of the UK's most reliable export markets (House of Commons 2016). Notwithstanding initial enthusiasm in the UK energy sector for the deployment of hydraulic fracturing or 'fracking' technologies to exploit untapped shale potential in the north of England, the UK government halted its support for fracking in 2019 in the face of widespread civil society opposition (Bradshaw et al. 2022). Although a new report on the viability of fracking in the UK was ordered by the Johnson government in the wake of mounting concerns regarding rising energy prices and energy insecurity in early 2022, the potential for shale commercialisation in Britain remains doubtful and US dominance remains strong (Cooper 2022). Moreover, declining demand in a 'maturing' European market increasingly characterised by a drive towards green energy solutions has placed ulterior strain even on the best-established companies in the sector (House of Commons 2017).

Although the above-described trends appear incongruous at time of writing in light of the energy crisis being faced in Europe as a result of the unforeseen conflict in the Ukraine, it is worth noting that the analysis performed here stops short of making any claims regarding the present or future impact of these developments on the fossil fuel industry in the UK and beyond. With that in mind, dieselisation, Shale production and European market maturity are important contextual factors that must be taken into account in an analysis of UK fossil fuel industry involvement in the political process.

Such is the size and importance of the UK fossil fuel sector that it is represented politically by a number of highly organised and professionalised trade associations and industry groups, many of which attempt to rebrand themselves in a greener light by simultaneously straddling

fossil fuel interests and sustainability discourse. The United Kingdom Petroleum Industry Association (UKPIA 2019), for instance, says in its mission statement, 'We promote policies that support our members' interests. Through constructive engagement we are able to demonstrate the downstream oil sector's enduring role in the UK's long-term, low-carbon future.' Oil and Gas UK, a representative body for offshore petroleum companies, is now Offshore Energies UK (OEUK) with a rebrand that aims to extend its scope to all offshore energy producers despite the fact that all its member operators are petroleum companies at time of writing.[1] Other trade associations include the UK and Ireland Fuel Distributors Association (UKIFDA), the UK Oil and Gas Industry Association (UKOGIA), United Kingdom Onshore Oil and Gas (UKOOG), the Oil Firing Technical Association (OFTEC), the Oil and Gas Independents Association, and UKLPG. Thus, when I refer to 'actors from the fossil fuel sector' in this chapter, I refer not only to companies directly involved in oil and gas exploration and production, but also to the industry associations that aggregate and represent their interests.[2]

None of this, of course, constitutes evidence of influence on the political process, much less on climate policy. It is worth noting, however that while by renaming the 'Oil and Gas Authority' the 'North Sea Transition Authority', the British Government appears to be signalling a shift in its energy strategy, it has not ceased its North Sea licensing rounds. Several new North Sea fossil fuel projects were in fact approved within the same time period as the name change was taking place (Kulovic 2022), only months after the COP26 Glasgow Summit, despite robust scientific evidence indicating that only a moratorium on exploration would allow the UK to meet its professed climate targets (IPCC 2022). This asymmetry between discourse and policy has attracted scrutiny from civil society and climate scientists, and anecdotal as it may be, underscores the need for further investigation of the methods and avenues used by the petrochemical industry to influence environmental and climate policy in the UK.

This chapter takes advantage of the public consultation forum in the UK, a 'typical case' within the scope of the relationships hypothesised in Chapter 2, in order to observe

[1] Membership information can be found in the OEUK Members Directory at https://oeuk.org.uk/members-directory/ (accessed July 2022)

[2] It is worth noting that relevant actors within this sector include not only UK-owned actors such as BP, but also other international actors such as EDF, ENEL and Total to name but a few. The membership of interest groups representing the sector is consequently likewise internationalised. I do not differentiate empirically between UK-owned and non-UK-owned firms as I do not have differential theoretical expectations for their behaviour. I consider a fossil fuel company or interest group to be a relevant actor in the UK petrochemical sector not by virtue of its ownership, but by virtue of its involvement in exploration or production on UK territory or in UK waters.

documented interactions between the fossil fuel industry and policymakers within the broader scope of state-society communication. The purpose of this exercise is to ascertain whether, as hypothesised, fossil fuel interests engage in systematic participation in public consultations with an intent to influence environmental and climate policy in the typical case of the UK.

This chapter does not aim to provide evidence of influence: its aim is that of identifying the attempted exercise and strategies of influence by the fossil fuel industry in the public consultation process. By looking at a 'typical case' among countries experiencing fossil fuel production, it aims to draw conclusions regarding the importance given to this institution by actors from the fossil fuel industry and regarding their pattern of influence-seeking behaviour therein.

The next section provides an overview of other factors of interest in the British context, outlining the ways in which they may inform case outcomes. This includes a discussion of British pluralism, of the political landscape that has determined how parties, governments and other decisionmakers have situated themselves relative to environmental and climate issues, and of the potential role of privatisation and the consequent dominance of multinationals in defining the intensity and patterns of fossil fuel interest participation in public consultations in this issue area. The role of state ownership is discussed with specific references to the role played by BP and other oil assets that were privatised by the UK government between 1977 and 1987 in state-industry relations.

Other Contextual Factors of Interest

British Pluralism

In a comparative analysis of firms and social policy in Denmark and the UK, Martin (2005) finds evidence of pluralist trends that influence participation in relations with the state in Britain. This includes relatively low rates of firm involvement in social schemes and relatively low rates of firms' informational and participatory reliance on their respective employers' associations, leading the author to conclude that interest representation in Britain carries pluralist traits. In this context, company-level resources are more important in determining engagement with the state and the policymaking process than in contexts with a more corporatist tradition, where group-level resources play a stronger role.

Neo-pluralism in the UK context may therefore further shape patterns of fossil fuel actor participation in public consultations by reducing the tendency for interest group participatory dominance over individual firms and by facilitating the representation of other firms and actors outside the fossil fuel sector in the consultation process. It is also possible, however, that large multinationals such as Shell and BP, given the scale of their resources, are able to generate bias even in a pluralist or neo-pluralist context.

Political Landscape: Parties and Decisionmakers

The political landscape that has determined how parties, governments and other decisionmakers in Britain have situated themselves relative to environmental and climate issues, although broadly underpinned by an acceptance of climate science (with the exception of climate-sceptic UKIP at the rightmost fringe), is susceptible to conflict along two dimensions: issue salience and disagreement over the appropriate degree of government intervention. These two dimensions, though not static over time, are in turn largely determined by the institutionalised competitive dynamics of a majoritarian system and by the ideological predispositions of parties along a left-right spectrum (Carter and Little 2020).

While neither Labour nor Conservatives appeared to prioritise environmental and climate issues prior to 2005, the left was more willing to develop policies in this field, as illustrated by the Labour Government's adoption in 1997 of emission reduction goals that exceeded Kyoto targets and by the 2001 Conservative manifesto which proposed a contraction of climate policy and the removal of the then-new Climate Change Levy (CCL). While neither party was leaning heavily on environment and climate, the right was especially opposed to the pursuit of such goals via state intervention in the form of fiscal or distributive measures (Mildenberger 2020).

The 2005 election brought about a significant change in inter-party competition, as the increased salience of climate change in international relations, coupled with the intensity of inter-party competition in a majoritarian context, ushered in what Carter and Little (2020) describe as a 'competitive consensus' wherein major parties fought for issue ownership. David Cameron's Conservatives emerged victorious from this rivalry and, emboldened by increased business support for climate strategies, embarked on an ambitious programme of extensive multi-instrument green strategies (Carter and Jacobs 2014). This strategy, however, proved itself ideologically unsustainable in the long run, placing the program at risk in the face of intra-party politics, particularly given internal dissenters emboldened by

UKIP's climate denial (Lockwood 2013). When Conservatives were re-elected to government in 2015, they rolled back many of their earlier energy-related policies and notably cut back subsidy schemes for renewables (Carter and Little 2020). This withdrawal was facilitated by increasingly dominant discourse over Brexit between the 2015 and 2019 general elections. Environmental and climate issues remained salient thanks to school climate strikes and the visibility of campaigns organised by Extinction Rebellion, however, prompting a return to 'competitive consensus' that was catalysed by a reinvigorated and increasingly climate-ambitions Labour (Carter and Pearson 2020). Also of note is the fact that despite Brexit, the importance of the parallel climate governance architecture provided by the European Union continues to endure in the British context (Lockwood 2021).

This political landscape reinforces the expectations I articulate in Chapter 2 in two ways. Firstly, the continued and growing salience of environmental and climate issues after 2005 leads me to expect that fossil fuel actors, perceiving a growing threat, may be faced with a stronger incentive to participate in public consultations. Secondly, I expect that awareness of inter-party differences over the justifiable extent of state involvement in markets in pursuit of environmental and climate governance may further motivate fossil fuel actors to participate strategically based on policy type in such a way as to avoid regulatory and fiscal expansion.

Privatisation of British Oil and Gas: Consequences for Relations between State and Industry

Fossil fuel industries were central to the broader move towards privatisation in the 1970s, and the UK was at the forefront of this movement with its sale of a minority stake in BP in 1977 (regarded as the starting point of the privatisation movement) and the later sale of British National Oil Company / Britoil, Enterprise Oil and Wytch farm to equity markets before the end of the 1980s (Wolf and Pollitt 2008). The privatisation of oil and gas which took place over the course of this 10-year period constituted a fast-paced divestment by the state of its vital resources in a world increasingly reliant on fossil fuels. This did not simply pave the way for a broader trend in the privatisation of national oil companies (Wolf and Pollitt 2008), but also altered the British government's policy on energy governance after more than 70 years of state involvement (Hoopes 1994) and created the preconditions for what Christophers (2020) describes as 'carbon neoliberalism' characterised by the dominance and influence of private capital relative to the state, the economy and society.

Oil Asset	Date of Sale	Remaining Government Shareholding (%)
British Petroleum (BP) – *Originally 68% govt shareholding*	June 1977	51
	November 1979	46
	July 1981	46
	September 1983	31.5
	October 1987	0
British National Oil Company (BNOC/Britoil) *Originally 100% govt shareholding* *Acquired by BP in 1988*	November 1982	48.8
	August 1985	0
British Gas Corporation (BGC)'s Oil Assets: Wytch Farm (Onshore) *Acquired by BP in 1984*	May 1984	N.A.
British Gas Corporation (BGC)'s Oil Assets: Enterprise Oil (Offshore) *Acquired by Royal Dutch Shell in 2002*	June 1984	N.A.
Total:		0

Table 3.0: UK: Sequencing of Oil Asset Sales in Britain (Hoopes 1994)

The period between the start of British government involvement in oil and gas in 1900 and the start of the privatisation process is summarised in three phases (Hoopes 1994). The period 1900 – mid-1950s was defined by government investment and acquisition of a controlling stake in the Anglo-Persian Oil Company (APOC), which became British Petroleum (BP) in 1954. The mid-1950s – mid-1960s encompassed the simultaneous waning of British dominance in the Middle East and increasing economic dependence on oil. The phase directly preceding privatisation, from the mid-1960s to the mid-1970s, was marked by the growth of the Organisation of Petroleum Exporting Countries (OPEC) and by oil crises that caused increased awareness of energy security concerns, as well as by the discovery of petroleum reserves in the North Sea and the British government's early attempts at attracting investment. The economic challenges associated with this period catalysed the sale of a minority stake in BP, starting a process (outlined in table 3.0) which resulted in the wholesale privatisation and eventual concentration of the upstream oil sector in Britain.

This facilitated the emergence of a new brand of fossil fuel policy in Britain, propelled not by the interests of the state but by those of the petrochemical industry (especially those of the two largest British multinationals, BP and Shell), which have managed to capture informational exchanges and policymaking processes to the detriment of other stakeholders – including, but not limited to, labour interests – and of the public sector (Cumbers 2012; Christophers 2020). Particularly exemplary in this regard are BP and the British National Oil Company (BNOC). BP's history and sectoral dominance were almost wholly shaped by

the British state prior to 1977, but privatisation allowed the multinational to absorb smaller companies, resulting in a level of industry concentration that facilitated (especially fiscal) policy influence in ensuing decades (Cumbers 2012). BNOC, on the other hand, had been created in 1975 by Tony Benn (who had been at the forefront of opposition to the privatisation process) specifically to assert state authority over the direction of development of the fossil fuel sector and to reinforce the state's financial stake therein, but it too was privatised in 1982 after failing to fulfil its brief, and was subsequently acquired by BP in 1988 (Christophers 2020).

Just as exemplary is the fiscal regime from which North Sea extractive industries have benefited since privatisation, which appears to have been designed not to guarantee a reasonable portion of revenues for the state (which is the ultimate proprietor of the resources in question) or for the taxpaying public, but to safeguard private sector eagerness for exploration and extraction (Wright and Boué 2018). The Thatcher government initiated a process of fiscal contraction that carried on into the 1990s and that, even after corrective efforts in the 2000s, never expanded back to its former high of 50% (Christophers 2020).

This dynamic has to some extent reversed the political relationship between industry and the state (i.e., between the proprietor of a resource and the companies exploiting it) and fostered the growth of a powerful fossil fuel lobby with the resources and centralisation to oppose increased regulation or fiscal expansion (Wright and Boué 2018). This relationship also has potential implications for fossil fuel interest participation in consultations on environment and climate.

Notably, this places industry actors at an informational advantage that facilitates bias in state-society relations and mitigates pluralistic expectations regarding a variety of societal actors benefiting from access to the state via institutions such as that of public consultation. In this context, the state is largely responsive to industry developments, and not vice versa. It is therefore possible that the dynamic emerging from privatisation and from the consequent dominance of multinationals like BP and Shell relative to the state, when combined, further increase the incentive for fossil fuel actors to participate in the consultation process to retain control over information flows and prevent other actors from mitigating their influence over environmental and climate proposals. This also reinforces my expectations regarding actor-type dominance (by underscoring the extraordinarily low barriers to mobilisation from which fossil fuel actors benefit in the UK context) and my expectations regarding the role of policy type in shaping incentives for participation.

Research Design

This empirical exercise is carried out using data from the UK digital consultation database and borrows methods from the process-tracing toolbox in pursuit of evidence of fossil fuel interest embeddedness and systematic participation in environmental and climate policy consultations. It employs the logic of 'hoop' and 'smoking gun' tests (Van Evera 1997; Bennett 2010; Collier 2011) in conjunction with a statistical analysis of data on UK consultation responses. Firstly, evidence of participation by fossil fuel interests is required before any formal or statistical test is performed – the hypothesis of systematic participation with an intent to influence policy can naturally be dismissed if participation does not occur. Secondly, a prerequisite for the hypothesised pattern of participation by these industries is their embeddedness in the process, by which I mean that sporadic participation is here considered sufficient grounds for dismissal of the argument. For this embeddedness requirement to be met, the central tendency of fossil fuel responses (as measured using mean or median, contingent on the distribution of the variable), must be non-zero. After these requirements are met, this analysis seeks 'smoking gun' evidence of the systematic pursuit of influence by fossil fuel interests in the public consultation forum. The hypotheses formulated in Chapter 2, which are based on a theoretical framework of actor- and policy type-dependent patterns of participation in consultations, are tested with this purpose in mind.

These hypotheses seek 'smoking gun' evidence of the use by fossil fuel interests of public consultations as an avenue of influence along two distinct dimensions. Firstly, they argue that fossil fuel interests, because of the organisational, professional and financial advantages, are better positioned than other groups to successfully exploit the opportunities of influence offered by public consultation processes. The first set of hypotheses therefore argue that:

H_{1a}: Actors from the fossil fuel industry are more likely to respond to environmental public consultations than public interest organisations. [3]

H_{1b}: Fossil fuel industry groups are more likely to respond to environment- and climate-related public consultations than fossil fuel companies.

Along a second dimension, these hypotheses also contend that that this strategic pursuit of influence also manifests itself in the form of differential participation by fossil fuel interests,

[3] 'Actors from the fossil fuel industry' refers to all actor types, i.e., it includes individual companies and interest groups or associations associated with the industry.

depending on the type of policy that is being consulted upon, whereby policies entailing coercive mechanisms that target incumbent industries are more likely to elicit their response:

H_2: Actors from the fossil fuel industry are more likely to respond to environmental- and climate-related public consultations when the policies being proposed entail targeted coercive mechanisms than when they entail remote coercive mechanisms displace costs onto public budgets.

Given the size of the fossil fuel sector and its status in the UK economy, my expectation is that the data analysed in this chapter will demonstrate not only the embeddedness of actors from this sector in environmental and climate-related consultations, but will also provide 'smoking gun' evidence of their dominance relative to other actors and their differential and systematic pursuit of influence according to proposed policy types.

Creating a Dataset from Open-Source Data

The *Gov.uk* portal[4] contains a repository of public consultation documents dating back to the year 2000. At time of writing, this totals 6,242 consultations, all easily searchable and classified by topic and sub-topic, ranging from more topical contemporary policy areas (Brexit and Coronavirus) to typical policy fare (housing and welfare). A typical entry in this virtual archive is accompanied by relatively extensive documentation in pdf format, including, but not limited to, the original consultation document as published to stakeholders, any relevant technical information in the form of impact assessments or other Appendices, a list of respondents, an abridged account of responses submitted by stakeholders (responses are not made available in original or raw form), and a government response to the consultation outcome.

The manner in which these documents are made available to the public is fairly standardised, thanks in part to the Code of Practice on Consultations (2008), and to the OECD's active monitoring of its members' consultation practices (OECD 2010), yet non-negligible inconsistencies are still observed, not only in terms of presentation, but also in terms of praxis. Several years-old closed consultations[5] are labelled as not having been fully processed, resulting in a lack of published outcomes, and in gaps in the data. Inconsistencies are present both over time and across government ministries and departments, with

[4] *Gov.uk, Policy Papers and Consultations* (accessed July 2022 at https://www.gov.uk/search/policy-papers-and-consultations)

[5] Whether a consultation is 'open' or 'closed' denotes its status. A 'closed' consultation is a one for which the deadline for responses has expired.

publication templates only loosely adhered to. This is especially true of lists of respondents to public consultations, which are presented in a manner that can best be described as *ad hoc*, listing all respondents by name in most instances, but often providing only data clustered by actor or sector type.

This poses significant barriers to an automated approach to data gathering in a project where stakeholder responses constitute the dependent variable and makes the endeavour altogether more labour-intensive. The creation of a dataset of responses to public consultations on environmental policy in the UK thus requires an immersive, hands-on approach, as well as extensive familiarisation with consultation documentation.

For the purposes of this research question, only closed consultations within the 'Environment' topic and 'Climate Change and Energy' subtopic are analysed, yielding 247 individual consultations. Further investigation unfortunately reveals severe gaps in reporting within this subset, with only 89 of these entries in the repository being accompanied by information on the consultation outcome (162 entries, in contrast, await a published outcome at time of writing). Of the 89 consultations accompanied by outcome information, only 70 provide sufficiently granular detail on respondents as to be useful (where documentation only describes respondents as 'companies' or 'trade associations' instead of listing them by name, for instance, the level of information does not suffice). Results obtained in this analysis must be viewed with awareness of this important empirical constraint. Although every effort is made to optimise the data-gathering process in such a way as to extract the maximum amount of information from available sources, these sources are in and of themselves incomplete. The choice of analytical methods must therefore take these limitations into account, and inferences drawn from results can must be generalised with caution.

Measuring Participation by Actor Type

A central part of this data-gathering process is the categorisation of respondents to consultations in a manner is both consistent with the literature and opportune to the study of fossil fuel actors within this specific institutional framework. Rasmussen (2015) separates consultation respondents into 'companies', 'interest groups', 'public', 'private persons or action groups', and 'others', and further splits the 'interest group' category into 7 sub-categories depending on the interests they represent ('business', 'institutional', 'occupational', 'trade union', 'identity', 'public', and 'other'). In her ensuing analysis, the

distinction between individual companies and interest groups is found to be an important determinant of patterns of engagement. Actor behaviour within the 'interest group' category is also not found to be homogenous, as the patterns of engagement of trade, industry, and business associations are found to differ significantly from those of organisations representing identity causes and the public interest.

The focus of this analysis is not, however, on general actor-level patterns of participation (which are relatively well-documented), but rather on the specific patterns of participation displayed by actors from the fossil fuel industry within the specific context of environment- and climate-related consultations. In consequence, it is not especially useful to account for every subtype of interest organisation, and while the central categories are borrowed from the literature, sub-group granularity is forfeited in favour of greater attention to the identification and classification of fossil fuel industry actors. With the aid of the Companies House[6] database, as well as reference to the contributors' official online platform whenever possible, respondents are first classified according to the following schema:

1 Trade/Industry/Business/Professional Associations and Trade Unions;

2 Public Interest Organisations, Clubs, Non-Profit Groups, Charities, NGOs, and Consumer Groups;[7]

3 Other Membership Organisations and Non-Profit Institutions;

4 Individual Companies, Businesses, Firms, and Financial Institutions

5 Academia and Think Tanks

6 Public and Semi-Public Bodies, Regulators, Local Authorities, Devolved Administrations, and Police Services

7 Other, including Private Citizens

[6] Companies House is the UK's registrar of companies, and is an executive agency, sponsored by the Department for Business, Energy & Industrial Strategy. All UK-based companies are registered with Companies House and are required to submit to the agency financial statements and other information pertaining to the types of business activities conducted. Data are accessible at https://www.gov.uk/government/organisations/companies-house (accessed July 2022)

[7] This category includes groups representing identity-based causes (e.g., the elderly) and causes of broad societal relevance (e.g. environmental non-governmental organisations), in contrast to the first category, which includes only concentrated trade-, industry-, business- or profession-related interests.

Respondents connected to the fossil fuel industry are also identified as part of this process, and are labelled either as 'fossil fuel companies' or as 'fossil fuel interest groups'. When this classification process is complete, the list of respondents is also cross-referenced with a database of all offshore and onshore operators of oil and gas fields in the UK obtained via the NSTA (formerly the OGA)[8] to ensure that all fossil fuel respondents are identified.

This data-collection process first yields 7 numerical variables, one for each actor class, that organise responses[9] at the consultation-actor class level. These vectors are also transformed into percentage values to yield an equivalent set of variables that is more illustrative of distribution patterns across actor types. It also yields 3 measures of fossil fuel industry response rate in the form of 'fossil fuel interest group', 'fossil fuel company', and 'all fossil fuel' responses.[10] These variables are also presented in percentage form to better inspect their distribution.

Name	**Responses**	**% All Responses**
British Rig Owners' Association	1	0.4
Energy UK	24	9.8
European Oleochemicals	1	0.4
OFTEC	1	0.4
Oil and Gas Independents Association	1	0.4
Oil and Gas UK	9	3.7
UK Onshore Oil and Gas	1	0.4
UK Onshore Operators Group	1	0.4
UKIFDA	1	0.4
UKLPG	5	2.0
UKPIA	8	3.3

Table 3.1: UK: Summary of Responses Submitted by Fossil Fuel Interest Groups

Tables 3.1 and 3.2 summarise responses from fossil fuel interest groups and companies, respectively, providing a snapshot of the industry landscape and drawing attention not only

[8] The North Sea Transition Authority, (formerly the Oil and Gas Authority, with a name change occurring in March 2022), is a private company limited by shares owned by the Secretary of State for Business, Energy and Industrial Strategy. Its remit is the governance and maximisation of hydrocarbon extraction from the North Sea. A complete list of offshore field consents can be found at https://www.nstauthority.co.uk/data-centre/data-downloads-and-publications/field-data/ (accessed July 2022)

[9] Responses are measured by frequency, rather than by content. This approach is justified in Chapter 2 using the argument that frequency of participation by different serves as a measure of the degree to which interest representation may be described as 'biased'. Moreover, available UK consultation data does not include responses in 'raw' form. Documentation provides a list of respondents and a synopsis of relevant comments that typically appears in the 'Government Response to Consultation' along with information on the general consultation outcome.

[10] The variable measuring trade body participation includes all trade, business, industry and professional associations, including associations representing fossil fuel interests. The 'fossil fuel interest group' variable only measures the frequency of interest group participation from this sector (i.e., the two variables are not mutually exclusive). The same logic applies to the variables measuring frequency of responses by companies, and the more specific variable measuring frequency of responses by fossil fuel companies.

to its size and pluralistic nature, but also to its embeddedness within the institution of public consultation. This is an encouraging preliminary finding: 11 industry groups and 44 companies submit a total of 244 responses across 70 consultations, providing evidence of repeated documented and measurable interaction between policymakers and representatives of the fossil fuel industry.

Name	Responses	% All Responses	Name	Responses	% All Responses
Apache North Sea	2	0.8	*Igas*	1	0.4
Atlantic Petroleum	1	0.4	*INEOS*	15	6.1
BG Group	2	0.8	*Marathon Oil*	1	0.4
BP	4	1.6	*Nexen*	1	0.4
Centrica	23	9.4	*Phillips / ConocoPhillips /Phillips 66*	3	1.2
Chevron	2	0.8	*Plutus Power Gen*	1	0.4
CNR International	1	0.4	*Premier Oil*	2	0.8
Cuadrilla	1	0.4	*Rockhopper*	1	0.4
Dana Petroleum	1	0.4	*RWE*	22	9.0
EDP / Repsol	7	2.9	*Sabic Petrochemicals*	1	0.4
Egdon Resources	1	0.4	*Scottish Power*	23	9.4
ENI	2	0.8	*Scottish Resources Group*	1	0.4
EnQuest	2	0.8	*Shell*	11	4.5
EOG Resources	1	0.4	*Spirit Energy*	1	0.4
Essar Oil	1	0.4	*Statoil*	5	2.0
Esso	5	2.0	*Subsea*	2	0.8
Exxon Mobil	4	1.6	*Talisman*	1	0.4
Fairfield Decom	1	0.4	*TAQA*	2	0.8
Gazprom	10	4.1	*Total*	7	2.9
GDF Suez	8	3.3	*Valero*	3	1.2
Honeywell	5	2.0	*Valiant*	1	0.4
Hurricane Energy	1	0.4	*Venture*	1	0.4

Table 3.2: UK: Summary of Responses Submitted by Fossil Fuel Companies

Classifying Consultations by Proposed Policy Type

A test of hypothesis 2 requires a reliable and efficient scheme by which the policies that are being proposed or modified in the consultation process can be classified according to distinctive 'types' based on the coercive mechanisms they entail. The following schema draws on the literature on policy types and the differentiated coercive targets they entail (which is reviewed in depth in chapter 2) to yield a relatively parsimonious system of classification criteria:

1. Does the consultation propose either the introduction or modification of a specific policy instrument?
- If yes, proceed to question 2
- If no, classify as 'information gathering'
2. Is the policy instrument of which the introduction or modification is being proposed funded by public budgets?
- If yes, proceed to question 3
- If no, proceed to question 4
3. Do the beneficiaries of said publicly-funded instrument belong to select groups that will acquire material gain?
- If yes, classify as 'distributive'
- If no, classify as 'constituent'
4. Does said proposed instrument include specific provisions whereby funds extracted from one group or actor are transferred to another?
- If yes, classify as 'redistributive'
- If no, classify as 'regulatory'

Table 3.3 summarises the outcome of this process, illustrating the proportion of different policy types in the consultations analysed here and drawing attention to the plurality of regulatory instruments among the different types. Three consultations are classified as serving an 'information-gathering' purpose, that is to say that they lack specificity and aim to collect stakeholder ideas instead of proposing the introduction or modification of a specified instrument. Three other consultations are classified as 'multi-instrument', meaning that more than one type of policy is proposed within the constraints of an individual consultation. Two variables are constructed using the resulting data. The first variable classifies proposed consultation policies as entailing either targeted (1) or remote (0) coercive mechanisms. The second is a binary variable that classifies proposed consultation policies as either regulatory (1) or non-regulatory (0) in accordance with the central conceptual distinction presented in my theoretical argument. This is used in robustness tests of H_2.

The Data at a Glance

Table 3.3 summarises the variables used to test all iterations of hypotheses 1 and 2. 25^{th} and 75^{th} percentiles are included in order to provide a preliminary picture of the distribution across key variables, which is of special importance to model selection in this instance due to limited sample size. It appears at first glance that most response variables are skewed with the exception of the variables for company and trade body responses, although this is possibly an artefact of small sample size.

Variable	N	Mean	Std. Dev.	Min	Pctl. 25	Pctl. 75	Max
Category	70						
Constituent	9	12.9%					
Distributive	10	14.3%					
Info-Gathering	3	4.3%					
Multi	3	4.3%					
Redistributive	12	17.1%					
Regulatory	33	47.1%					
Regulatory Dummy	70	0.514	0.503	0	0	1	1
Targeted Coercion Dummy	70	0.643	0.483	0	0	1	1
Responses	70	73.571	125.327	0	18	71.5	917
Trade Bodies	70	13.343	16.643	0	3	17.5	85
Public Interest Organisations	70	5.929	14.913	0	0	4	102
Other Membership Organisations	70	0.986	2.684	0	0	1	20
Companies	70	39.443	72.092	0	8.25	35	521
Academia	70	1.914	3.646	0	0	2	19
Authorities	70	7.086	17.835	0	0	5.75	125
Other	70	4.871	11.43	0	0	3	74
Fossil Fuel Interest Groups	70	0.714	0.854	0	0	1	3
Fossil Fuel Companies	70	2.771	2.829	0	0	5	10
All Fossil Fuel Responses	70	3.486	3.143	0	0.25	6	10
Trade Bodies (%)	70	21.739	14.397	0	11.825	29.606	67.413
Public Interest Organisations (%)	70	6.229	8.49	0	0.662	8.904	50.053
Other Membership Organisations (%)	70	1.708	4.248	0	0.327	1.445	33.775
Companies (%)	70	53.222	21.236	0	44.001	67.917	100
Academia (%)	70	3.192	5.288	0	0.452	3.508	29.577
Authorities (%)	70	8.03	10.001	0	1.017	9.459	45.701
Other (%)	70	6.994	10.679	0	0.406	8.287	46.993
Fossil Fuel Interest Groups (%)	70	2.476	4.387	0	0	3.541	22.222
Fossil Fuel Companies (%)	70	9.882	17.569	0	0	9.562	100
All Fossil Fuel Responses (%)	70	12.358	20.358	0	0.224	15.11	114.286

Table 3.3: UK: Summary Statistics of UK Environmental Consultation Data

Although, as expected, trade, business, industry and professional associations make a strong showing, constituting on average more than a fifth of responses (M = 21.739%), individual

companies and businesses make up on average more than half of all responses (*M* = 53.222%). This corroborates previous literature that finds trade and industry group dominance, though pervasive, to be contingent on systemic factors such as the degree of pluralism structuring state-society relations, which appears in this case to be relatively extensive (Rasmussen 2015). A glance at the summary statistics also reveals that the percentage response rate for public interest organisations (*M* = 6.229%), though higher than that of fossil fuel industry groups (*M* = 2.476%), is markedly lower than that of fossil fuel companies (*M* = 9.882%) and of fossil fuel industry responses as a whole (*M* = 12.358%). This provides an encouraging comparison on which to base further testing.

Ascertaining the distribution of variables measuring fossil fuel interest group, fossil fuel company, and public interest group participation is essential to the choice of a suitable testing methods given the relatively small size of the sample used in this analysis. Firstly, my proposed test of embeddedness requires a measure of central tendency of variables measuring fossil fuel industry participation, and a non-normal distribution of these variables indicates that median is a preferable measure of central tendency than mean value. Secondly, hypotheses 1_a, 1_b, and 2 entail a comparison of central tendencies between different respondent groups, which can either be performed using a T-test (parametric) or a Wilcoxon rank sum test (non-parametric), meaning that a choice between one of these two methods is contingent on the normality of my variables as normality is a prerequisite for parametric testing.

Figure 3.0 provides a visual representation of the degree of skewness in the measure of participation by public interest organisations, which contrasts with the normally-distributed variables of company and trade body participation. Figures 3.1 and 3.2 similarly illustrate the distribution of fossil fuel responses disaggregated by actor type, and provide similar indications of non-normal distribution.

A series of Shapiro-Wilk tests[11] are performed on the data to aid in corroborating this visual evidence of non-normality:

- *Test 1a* indicates that the distribution of public interest organisation participation as measured in raw numbers is non-normal to a statistically significant degree (*W* =

[11] Where the null hypothesis is a normal distribution. A p-value of <.05 therefore denotes non-normal distribution.

0.42, $p < .01$). A follow-up test on the percentage variable of the same name yields similar results ($W = 0.68$, $p < .01$).

- *Test 1b* suggests that the distribution of fossil fuel interest group participation as measured in raw numbers also is non-normal to a statistically significant degree ($W = 0.77$, $p < .01$). A follow-up test on the percentage variable of the same name offers similar results ($W = 0.62$, $p < .01$).
- *Test* 1c reveals that the distribution of fossil fuel company participation as measured in raw numbers is non-normal to a statistically significant degree ($W = 0.86$, $p < .01$). A follow-up test on the percentage variable of the same name gives a comparable outcome ($W = 0.60$, $p < .01$).
- *Test 4* predictably indicates that the distribution of fossil fuel industry responses as a whole, as measured in raw numbers, is non-normal to a statistically significant degree ($W = 0.90$, $p < .01$). A follow-up test on the percentage variable of the same name yielded similar results ($W = 0.63$, $p < .01$).

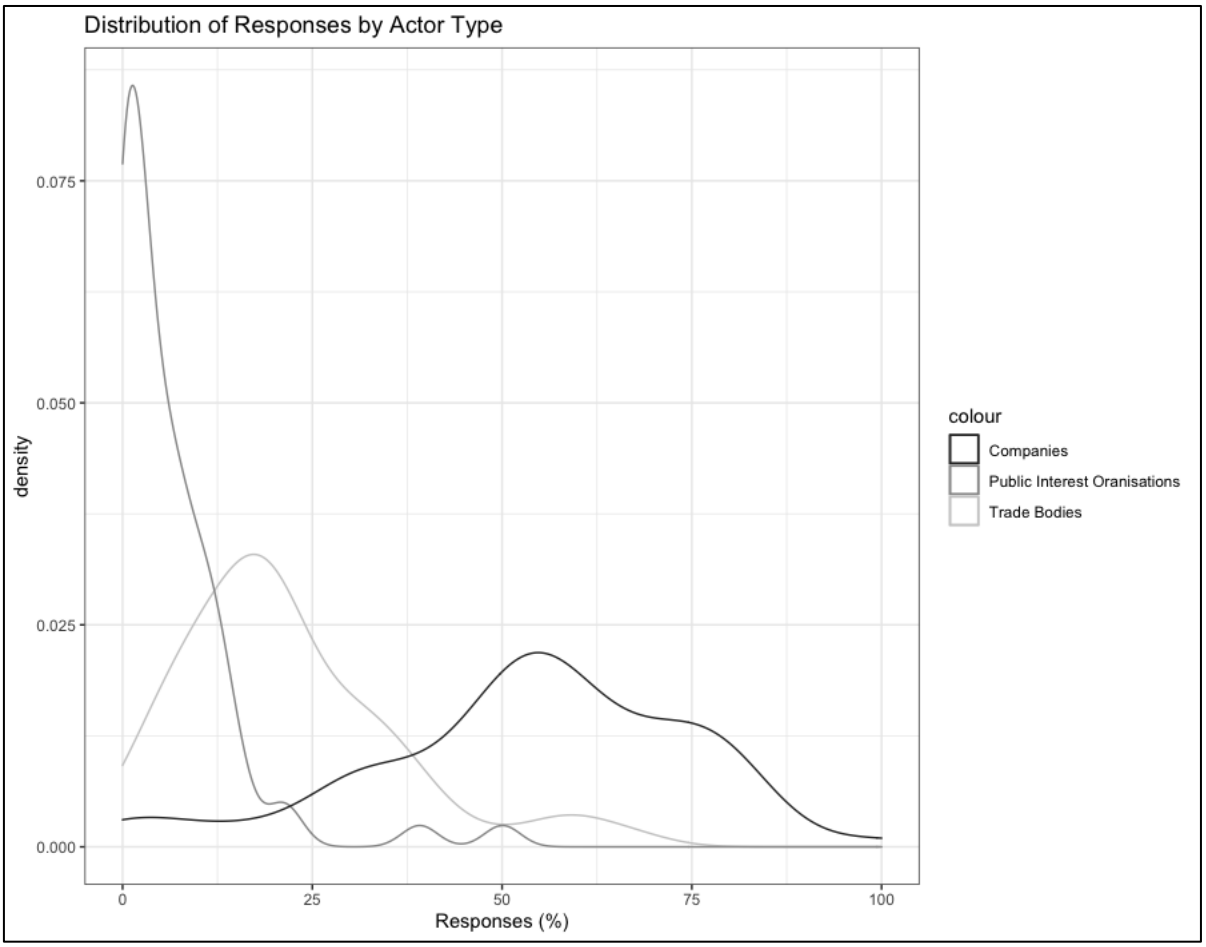

Fig. 3.0: UK: Distribution of Responses by Main Actor Types

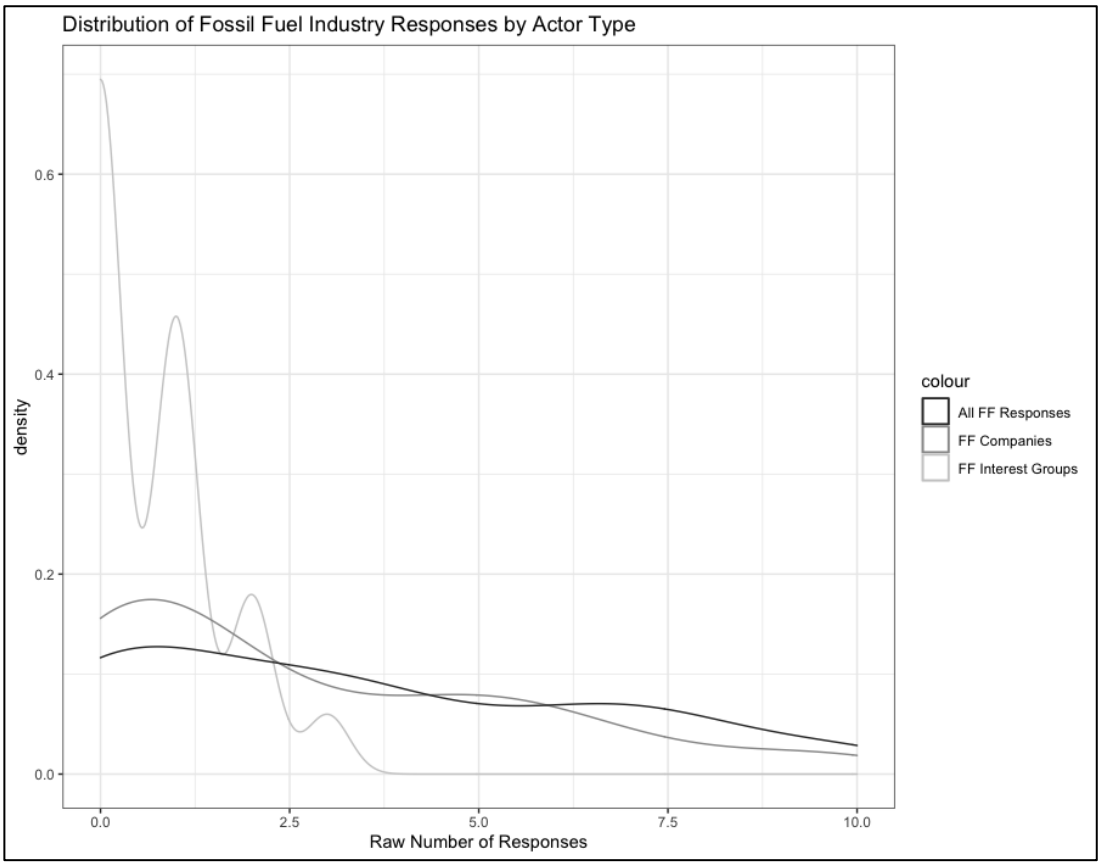

Fig. 3.1: UK: Distribution of Fossil Fuel Industry Responses by Actor Type (Frequency)

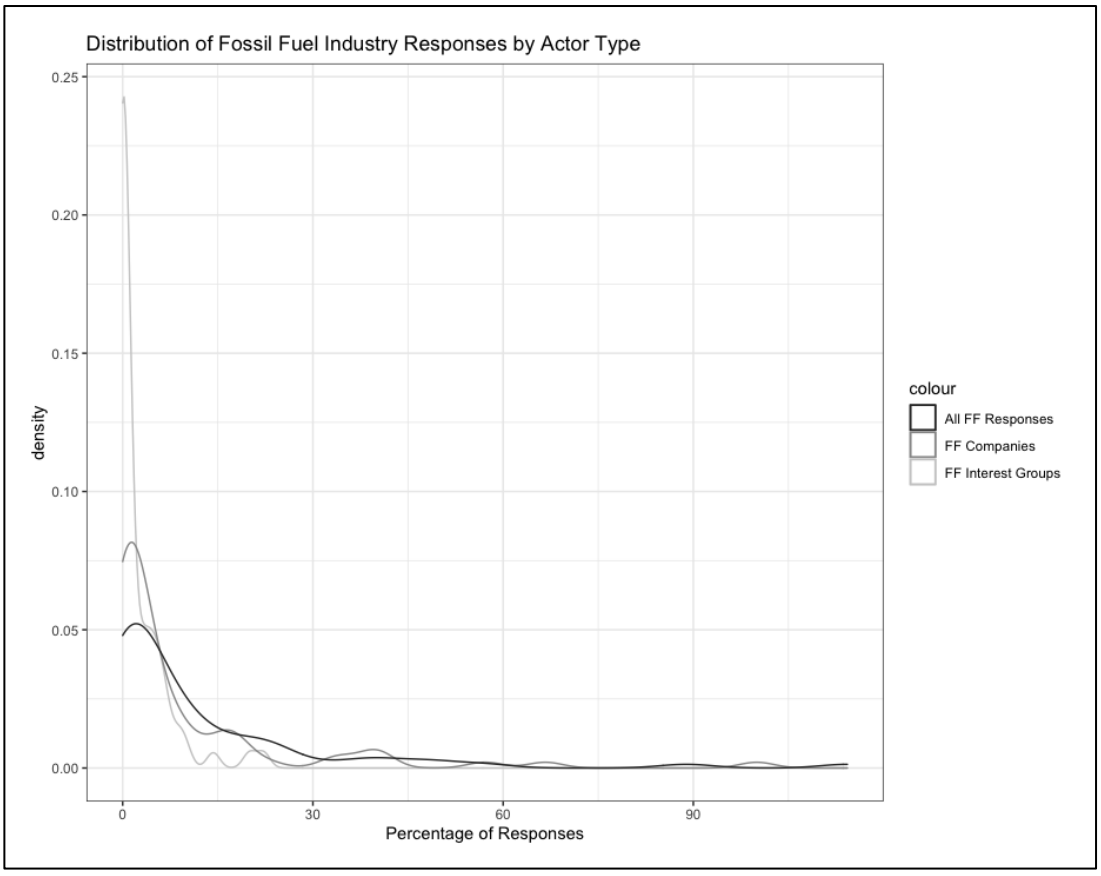

Fig. 3.2: UK: Distribution of Fossil Fuel Industry Responses by Actor Type (% of Total)

These outcomes suggest the suitability of non-parametric tests but also point to the possibility of the distribution of data along the above-described vectors being skewed as a result of outliers within the small sample. This indicates that logarithmic transformation may be advisable and perhaps conducive to parametric testing. A second series of tests is therefore performed on the log-transformed versions of the above variables, yielding the following results:

- *Test 2a* indicates that the distribution of logged public interest organisation participation is non-normal ($W = 0.84$, $p < .01$).
- *Test 2b* suggests that the distribution of logged fossil fuel interest group participation is non-normal ($W = 0.78$, $p < .01$).
- *Test 2c* reveals that the distribution of logged fossil fuel company participation is non-normal ($W = 0.90$, $p < .01$).
- *Test 2d* predictably indicates that the distribution of logged fossil fuel industry responses as a whole, is non-normal ($W = 0.88$, $p < .01$).

These results indicate that, even with logarithmic transformation, normality cannot be assumed for these variables, and that a median measure of central tendency, along with non-parametric tests of both sets of hypotheses, are preferable.

Further to the observation of non-normality, figures 3.1 and 3.2 point to the likelihood of a correlation between the response rate of fossil fuel companies and fossil fuel interest groups. Given the non-normal distribution of these variables, Spearman's ρ is used to test this possibility. Fossil fuel interest group responses are found to be positively correlated to fossil fuel company responses ($p < .001$).

Hypothesis Testing

A measure of fossil fuel industry embeddedness in public consultations is required ahead of a test of hypotheses 1_a and 1_b and hypothesis 2 in order to affirm their relevance. Without evidence of consistent engagement with the consultation process, the general hypothesis of systematic use of public consultations by the fossil fuel industry as an avenue of influence can be dismissed. In this instance, the central tendency of fossil fuel industry actor participation in sampled consultations is found to be non-zero, with the median number of all fossil fuel industry responses being 1.5, that of fossil fuel industry groups being 0.5, and that of fossil fuel companies being 2 (as measured by frequency). This affirms the relevance

of the general argument made in this chapter and allows me to pursue 'smoking gun' evidence by testing the hypotheses obtained in Chapter 2.

In view of the descriptive statistics reported above, and of the structure of the hypotheses that are reiterated below, which require a statistical test of comparison of means, Wilcoxon tests are selected as a non-parametric alternative to t-tests. A series of two-sample Wilcoxon signed rank tests are computed to test the first set of hypotheses, which aims to draw conclusions regarding a strategic pattern of participation determined by actor type in order to trace the roots of the potential influence of fossil fuel industries on the policy process. Results are reported below with reference to median and inter-quartile range.

Testing H_{1a}: Actors from the fossil fuel industry are more likely to respond to environmental public consultations than public interest organisations. [12,13]

- The median (raw) number of responses in the public interest organisation group is 1 (*IQR* = 4), whereas the median for all fossil fuel industry responses 1.5 (*IQR* = 1). The Wilcoxon test shows that the difference is not statistically significant (p = .358).
- Comparable results are obtained in follow-up tests where the response rate for both groups is measured as a percentage of the total, where the median for public interest organisations is 3.62 (*IQR* = 8.24) and the median for all fossil fuel industry responses is 3.84 (*IQR* = 14.9). This test fails to provide sufficient evidence to reject the null hypothesis (p = .555).
- A third iteration of the same test using logarithm-transformed vectors (*M* = 0.301, *IQR* = 0.699, and *M* = 0.602, *IQR* = 0.77, respectively) similarly fails to indicate statistical significance (p = 0.8).

Testing H_{1b}: Fossil fuel industry groups are more likely to respond to environment- and climate-related public consultations than fossil fuel companies.

- The median (raw) number of responses for fossil fuel industry groups is 0.1 (*IQR* = 5), whereas the median for all fossil fuel industry group responses 2 (*IQR* = 5). The

[12] Robustness tests for this chapter are presented in Appendix 1.
[13] A re-test of H_{1a} using fossil fuel responses disaggregated by actor type is also presented in Appendix 1, with the notable finding that, contrary to expectations, the median value of public interest organisation participation is found to be significantly, and robustly, higher, than that of fossil fuel industry groups. The implications of this result, also illustrated in figures 3.3 and 3.4, are explored in greater depth in the next section.

Wilcoxon test shows that the difference between these groups is statistically significant (p = < .0001, *effect size* r = 0.388).

- Comparable results are obtained in follow-up tests where the response rate for both groups is measured as a percentage of the total, where the median for fossil fuel industry groups is 0.055 (*IQR* = 3.54) and the median for fossil fuel industry company responses is 2.91 (*IQR* = 9.56). This test provides sufficient evidence to reject the null hypothesis (p < .0001, *effect size* r = 0.298).
- A third iteration of the same test using logarithm-transformed vectors (*M* = 0.151, *IQR* = 0.301, and *M* = 0.477, *IQR* = 0.778, respectively) similarly indicates statistical significance (p = < .0001, *effect size* r = 0.388).
- While the null hypothesis is rejected in all three iterations of this test, the alternate hypothesis as presented above can also be rejected. Contrary to expectations, the median value of fossil fuel company participation is found to be significantly, and robustly, higher, than that of fossil fuel industry groups. This is reinforced by ancillary findings presented in Appendix 1, where the median value of public interest organisation participation is found to be significantly, and robustly, higher, than that of fossil fuel industry groups. The implications of these results are discussed with emphasis on potential links to contextual factors including British pluralism and the emergence of powerful multinationals following Britain's privatisation of the oil sector.

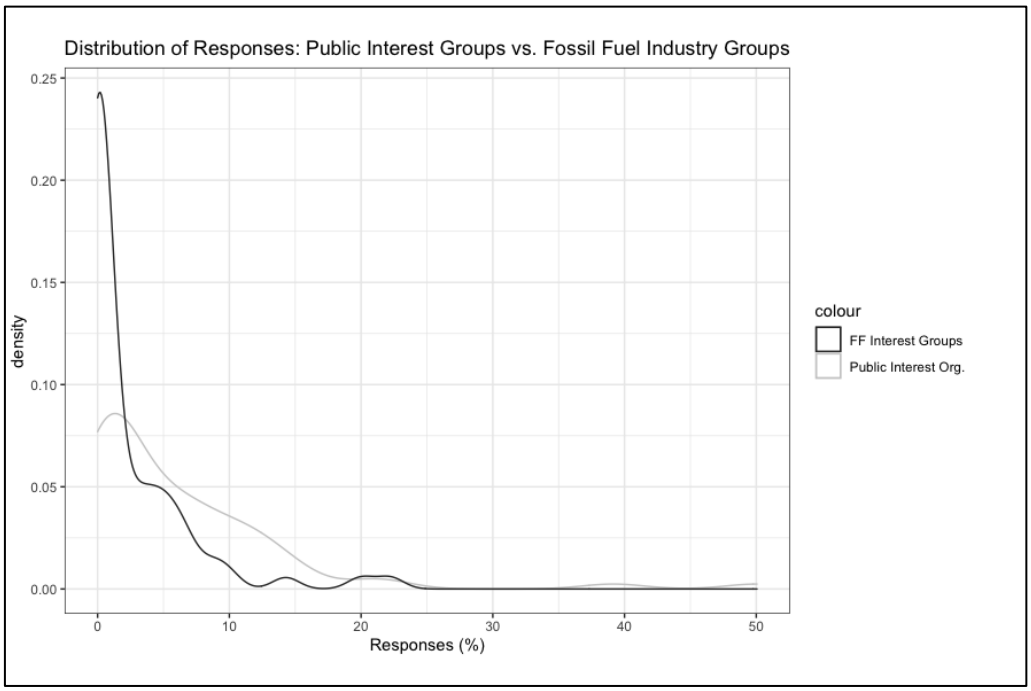

Fig. 3.3: UK: Comparative Distribution of Consultation Responses by Public Interest Organisations and Fossil Fuel Industry Groups (% of total)

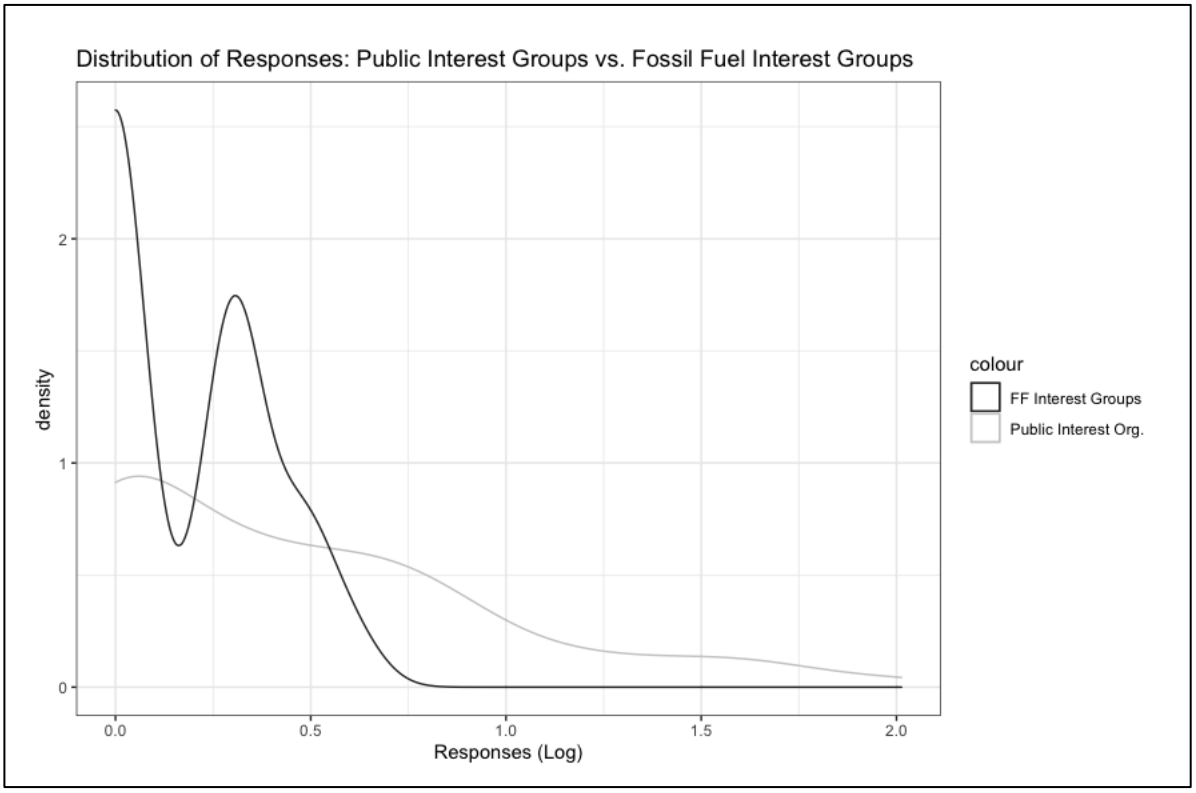

Fig. 3.4: UK: Comparative Distribution of Consultation Responses by Public Interest Organisations and Fossil Fuel Industry Groups (log)

Two-sample Wilcoxon signed rank tests are also employed to test H_2, which compares the patterns of participation of fossil fuel industries in consultations on policies with different coercive structures. Results are reported below with reference to median and inter-quartile range.

H_2: Actors from the fossil fuel industry are more likely to respond to environmental- and climate-related public consultations when the policies being proposed entail targeted coercive mechanisms than when they entail remote coercive mechanisms that displace costs onto public budgets.

- The median (raw) number of responses in the remote coercive instrument group is 3 (*IQR* = 5), while the median for the targeted coercive instrument group is 3 (*IQR* = 7). The Wilcoxon test shows that the difference is not statistically significant (p = .9654).
- A similar result is obtained in a follow-up test where responses are operationalised in percentage form. The median of the remote coercion group is 5.83 (*IQR* = 19.1), and that of the targeted coercion group is also 3.57 (*IQR* = 13.5). Unsurprisingly given these statistics, this test fails to provide sufficient evidence to reject the null hypothesis (p = .697).

- A similar result is obtained in a further follow-up test where responses are operationalised in log form. The median for the remote coercion group is 0.602 (*IQR* = 0.544), while the median for the remote coercive instrument group is 0.602 (*IQR* = 0.903). The Wilcoxon test shows that the difference is not statistically significant (p = .9654).
- Follow-up tests performed using the regulatory dummy as a measure of policy type yield results consistent with those reported above. The robustness of these findings is also verified with follow-up tests that disaggregate responses by fossil fuel actor type. These are provided in Appendix 1.

Interpreting Unexpected Results

Notwithstanding the difficulties associated with the identification of the roots and nature of special interest influence, it is apparent from the data summarised and analysed above that fossil fuel industries are highly active in consultation processes in the UK. This evidences the fact that not all potential avenues of influence are hidden from the general public and highlights the importance of exploiting all institutionalised interactions between policymakers and this mammoth industry.

While fossil fuel interests are found to be embedded in the UK public consultation process, the expected 'smoking gun' evidence of a pattern of systematic or strategic participation with the purposeful aim of policy influence is not found. Contrary to expectations, fossil fuel industry actors are not found to be more dominant than public interest organisations among respondents to climate-oriented public consultations and no evidence of disproportionate participation and bias by fossil fuel industries in the consultative process is identified. Moreover, no evidence is found to corroborate actor type-level predictions regarding the preponderance of fossil fuel interest groups relative to fossil fuel companies. On the contrary, it is found that fossil fuel companies are significantly more likely to participate than their corresponding interest groups, and further testing presented in Appendix 1 shows that public interest organisations are also more likely to participate than fossil fuel interest groups.

These results are illustrative of the need to contextualise expectations regarding patterns of influence-seeking behaviour by fossil fuel industries as well as patterns of state-society interaction more broadly. In the case of the UK, it appears that the pluralist environment of state-society relations, while mitigating the dominance of fossil fuel industry groups relative to public industry organisations such as environmental NGOs, still tends to advantage large

commercial and business interests by allowing large multinationals such as Shell and BP to leverage their political-economic clout to bias institutions of state-society relations such as public consultations. The powerful and heavily concentrated fossil fuel lobby that emerged in Britain following the wholesale privatisation and liberalisation of the oil sector between 1977 and 1987 appears to be able to rely on firm-level resources in its pursuit of policy influence, notwithstanding the existence of multiple sectoral organisations.

This analysis fails to find evidence of a relationship between the coercive mechanisms of the proposed policy and fossil fuel actor responses, but this does not necessarily validate a minimalist theoretical explanation based on policy goals, as policy instrument classification is a delicate exercise that may require more conceptual nuance than is exercised here in order to be theoretically and empirically useful.

In order to better interpret these unexpected results, this section provides an overview of four diverse case studies of individual consultations that exemplify different values of 'policy type' and 'fossil fuel industry response' measures. The purpose of this exercise is exploratory – to better understand the nature and extent of fossil fuel participation in consultative institutions of state-society relations (Seawright and Gerring 2008). Selected cases and selection criteria are shown in figure 3.5.[14]

		Policy Type	
		Targeted Coercion: Regulatory	*Remote Coercion: Distributive*
Fossil Fuel Industry Response Rate	*High (≥ Pctl.75)*	The proposed introduction of the Offshore Environmental Civil Sanctions Regulations (published 18/01/2018)	Downstream oil supply resilience (published 17/10/2017)
	Low (≤ Pctl. 25)	Climate change: enforcement and sanctions guidance (published 10/01/2014)	Simplifying our Climate Change Agreements (published 29/03/2012)

Fig. 3.5: UK: Selected Cases by Policy Type and Fossil Fuel Response Rate

[14] Cases are picked via random selection following the subsetting of data into 4 groups according to policy type and total fossil fuel industry response rate (response rates are discretised using 25th and 75th percentiles as upper and lower cut offs).

'The Proposed Introduction of the Offshore Environmental Civil Sanctions Regulations', 18/01/2018

This consultation was published in January 2018, following the June 2016 referendum on EU membership, with the purpose of establishing a sanctioning system for violations by offshore operators to be introduced after the UK's exit from the EU. According to Government documentation (Department for Business, Energy and Industrial Strategy 2018), its primary motivation was a concerning lack of deterrence frameworks against environmental non-compliance. It is stated that:

> There are no financial sanctions available to The Department for Business, Energy and Industrial Strategy's Offshore Petroleum Regulator for Environment & Decommissioning (OPRED) and although a case which is subject to criminal prosecution can result in substantial financial penalties being imposed by the criminal courts, such cases are slow, resource intensive and costly to pursue.' (Department for Business, Energy and Industrial Strategy 2018, 3)

Consequently, it is proposed in this consultation that a framework of civil (and corresponding financial) sanctions be introduced in order to increase deterrence against offences and to punish breaches more proportionately and effectively, retaining criminal sanctions only for the most egregious violations. The proposed policy instruments in this consultation are therefore explicitly targeted in their coercive means, as they concentrate costs on the target industry, and entail diffuse benefits in the form of environmental protection.

My expectation given the theoretical framework laid out in previous sections is for the response rate of fossil fuel industries to be at the high end of the distribution. This expectation is corroborated by consultation response data, which shows that out of 13 respondents, 7 are fossil fuel companies and 2 are fossil fuel industry groups. The contents of these submissions, although not provided in raw form, also appear conformant with expectations. Although a majority of respondents are reported to be satisfied with the proposed system, several comments indicate a degree of pushback from the fossil fuel industry.

These include, amongst others, a 'concern that civil sanctions could be over used by OPRED and that their imposition would not be proportionate to the offence' (Department for Business, Energy and Industrial Strategy 2018, 4), a request for 'a full list of all aggravating and mitigating factors to be considered by OPRED when determining whether to impose a sanction' (Department for Business, Energy and Industrial Strategy 2018, 5), as well as some

dissatisfaction with the suggested appeals process where some argued '28 days to lodge an appeal was not sufficient time and that this should be extended' (Department for Business, Energy and Industrial Strategy 2018, 12).

While the government's response indicates that it stands firm on most of its proposals, stakeholder pushback does seem to have some effect: the lack of a material or significant impact on the environment is rejected as a mitigating factor, for instance, but the appeals-lodging window is extended to 35 days. While the above factors and outcomes are conformant with the expectations produced by my theoretical framework, they fail to provide insights as to how this may be improved.

'Simplifying our Climate Change Agreements', 29/03/2012

This consultation, published in March 2012, proposes a simplified framework for the Climate Change Agreements (CCA) scheme. A CCA is an elective agreement between a participating industry sector or individual operator and the Environment Agency and is designed to incentivise a reduction in fossil fuel consumption and in consequent CO_2 emissions. Industries or operators party to a CCA are required to account for and limit their energy consumption to pre-established caps over 2-year periods. This instrument is distributive insofar as it rewards eligible compliant industries and operators with a discount on the Climate Change Levy (CCL), thus creating a mechanism characterised by diffuse costs, and by concentrated benefits for adherents (Gov.uk 2014).

My expectation given the theoretical framework laid out in Chapter 2 is for the participation rate of fossil fuel industries to be at the low end of the distribution. This expectation is corroborated by consultation response data, which shows that although 52 companies and trade associations respond in total over the course of two consultation rounds, none of them are connected to the fossil fuel industry. Responses are consequently focused not on pushback against the goals of the proposed revised CCA framework, but on the details of its administration, such as different methods of carbon accounting (Department of Energy and Climate 2012).

As with the previous case, the values of x and y for this case are consistent with the expectations produced by my theoretical framework and fail to provide insights as to how this may be improved.

This consultation was published in October 2017 in the face of concerns regarding energy security in the event of identifiable, though low-probability, threats to energy supply coming to fruition. Although this is framed as a consultation grounded on plans for 'clean growth' (Department for Business, Energy and Industrial Strategy 2017, 5), its central concerns are clearly energy security and the robustness of the downstream oil sector, which is found to be facing a number of challenges due to industry fragmentation and international competition. The measures proposed to bolster the sector's resilience are distributive insofar as they do not specifically target it with specific costs. Proposed 'light touch' measures include improved risk identification via reinforced information and monitoring channels, as well as supportive measures including government spending and a reserve tanker fleet for fuel transport aimed at reinforcing the sector in the face of potential threats to supply.

My expectation given the theoretical framework laid out in previous sections is for the response rate of fossil fuel industries to be at the low end of the distribution as the need to push back against measures imposing targeted coercion is absent. Contrary to expectations, however, fossil fuel companies constitute 4, and fossil fuel interest groups 5, of the 28 responses to this consultation, placing this case in the upper quartile of the distribution.

Stakeholder responses are not provided in raw form; however, synopses of responses to various aspects of the consultation are provided in the Government Response (Department for Business, Energy and Industrial Strategy 2017). Theses indicate that feedback from the downstream oil sector is relatively mixed, with approval of light-touch measures among some responses tempered by others' concerns regarding potential government interference in the sector growing along with its support. It is stated that:

> Respondents emphasised the importance of Government's intention to minimise both market distortions and the burden on industry (administrative or otherwise), and requested clarity on the situations in which Government would use any powers. They also sought reassurance that Government would only use these powers in limited circumstances. (Department for Business, Energy and Industrial Strategy 2017, 7)

While the contributions of fossil fuel actors to this consultation do not appear to alter its outcome, this case offers theoretical insights in the form of two possible explanations of fossil fuel interest participation in a non-regulatory context. The first is that the distribution of benefits of a proposed policy may have as much bearing on patterns of participation as the distribution of costs. The second, more plausible option in light of the above-described

features of this case, is that fossil fuel companies and groups view distributive instruments with suspicion as they are wary of governmental interference with market dynamics.

This argument also echoes one of the main dimensions along which conflict emerges in the British political system over environmental and climate politics: the legitimate or justifiable extent of state involvement in the UK market. This should also be understood in the context of a then-newly re-elected Conservative government that was experiencing increased internal fragmentation over the balancing act between its environmental and climate strategy and its traditional ideological commitments and which had begun to roll back da number of energy-related policies. This adds credence to the argument that fossil fuel actors viewing distributive instruments as intrusive state involvement were emboldened in 2017 by signals of waning Conservative commitment to participate in consultations on proposed policies that did not entail targeted coercive measures of which they would bear the cost.

'Climate Change: Enforcement and Sanctions Guidance', 10/01/2014

The Environment Agency published this consultation in January 2014 in response to its evolving role as regulator in charge of different environmental regimes, including the EU Emissions Trading System (EU-ETS), the Carbon Reduction Commitment (CRC) and the Climate Change Agreements (CCA) scheme. This consultation proposes a specific outline of enforcement and sanctions guidance for participants in these schemes, all of which are designed as carbon- or emissions-pricing instruments, and the consultation is itself regulatory in intent as it focuses not so much on scheme administration but rather on the specification of sanctions in the event of non-compliance. This is an inherently punitive and deterrent Environment Agency 2014). The sanctions detailed in this consultation include, amongst others, criminal proceedings including prosecution, and civil sanctions including financial penalties and stop notices (Environment Agency 2015).

My expectation given the theoretical framework fleshed out in Chapter 2 is for the response rate of fossil fuel industries to be high given the regulatory and sanction-heavy nature of this consultation, as well as its clear (though indirect) aim of disincentivising fossil fuel usage. Yet contrary to expectations, none of the 14 respondents come from the fossil fuel industry, placing this case at the lowermost end of the distribution. Responses instead mainly come from other industry and trade associations representing sectors that are directly encompassed by these schemes. Most of these responses do not express dissatisfaction with the sanctioning

guidelines that are proposed, which are consequently adopted wholesale by the Environment Agency in 2014.

It therefore appears that regulatory policies do not attract participants from the fossil fuel industry unless the distribution of costs and benefits affects them directly, even though the goal is climate mitigation via energy transition. This case exposes a limitation of the analytical approach employed in this chapter: consultations often seek responses directly and exclusively from the groups that they specifically target, both by their verbiage and by the way they are communicated and transmitted to stakeholders. In consequence, not all climate-related consultations, perhaps regardless of the nature of their coercive mechanisms, and regardless of their general aim of transition away from fossil fuels, are accessible or worth participating in for fossil fuel industries. This limitation is structural and endemic to the way public consultations are conducted and may not be sufficiently accounted for here at research design level.[15]

This insight suggests two empirical alternatives. The first is to further restrict the consultations under study to those in which the fossil fuel industry is specifically targeted. This would shrink an already limited population of observations, reducing the potential for meaningful empirical analysis, but could also bring the dynamics of fossil fuel industry participation and influence into sharper focus.

The second is to expand the theoretical and empirical scope of this analysis to include the role of actors from sectors that, though not directly connected to fossil fuel production or distribution, are intrinsically embedded in the carbon lock-in that enables fossil fuel dominance despite advancements in the renewable and alternative energy sector. Such an approach would necessarily encompass the participation of established utilities and energy-intensive industries, particularly heavy industry, manufacturing, and transport. Although this would require a refocused theoretical and empirical approach, it may yield a more complete and holistic account of diverse but interconnected energy-centred interests.

[15] This limitation may be overcome in institutional contexts where consultees are formally called upon to respond, after which their choice to participate or decline the invitation can be used to extract a more empirically meaningful measure of response rates. The case of Denmark, which is examined in Chapter 4, is characterised by such ‘consultation lists’ and therefore enables the construction of this more precise measure of participation.

Conclusions

My purpose in this chapter has been to utilise data from public consultations on climate-related policy in the UK, which is selected from an OECD sample as a 'typical case' representing central tendencies on measures of fossil fuel industry clout and environmental and climate policy. The above analysis takes advantage of reported interactions between the fossil fuel industry and policymakers and investigates the possibility that the institution of public consultations constitutes to vested interests from the petrochemical industry a venue of systematic, strategic, and influence-seeking participation in environmental and climate policy in a 'typical case' such as that of the UK. In doing so, it finds evidence of the industry's embeddedness in the public consultation process, then tests the hypotheses formulated in Chapter 2 in pursuit of 'smoking gun' evidence of the above-described argument. These hypotheses are tested using data gathered from open-source long-form documentation of public consultations available on the *Gov.uk* platform.

I find that the UK fossil fuel industry is highly active in public consultations – a finding of some significance in and of itself which disputes accounts of interactions between vested interests and policymakers as being informal and inaccessible to public scrutiny.

I find insufficient evidence, however, to back the hypothesis that fossil fuel interests exert disproportionate dominance over the consultation process relative to public interest organisations. The hypothesis that fossil fuel interest groups are more likely to participate than fossil fuel companies as a result of their organisational, financial and technical advantages relative to individual firms (an argument that borrows heavily from theories of collective action and from existing literature on public consultation), is also dismissed, as the opposite is found to be true. The finding that fossil fuel companies are more likely to participate than their corresponding industry groups in the UK context draws attention to the importance of contextualising expectations of patterns of influence-seeking behaviour by the petrochemical sector. In this context, the pluralist characteristics of the stakeholder ecosystem, while undercutting the influence of fossil fuel industry groups, may have exacerbated the power dynamics that emerged between the petrochemical sector and the British state following the privatisation and liberalisation of the oil sector in the 1970s and 1980s. These contextual factors are likely to be at the heart of the ability of large fossil fuel corporations to bias institutions of state-society relations by relying on firm-level resources.

While these ‘smoking gun’ tests are not passed outright, the more general argument that actors from the petrochemical industry use the public consultation process to their advantage in the UK is weakened but not dismissed altogether.

The individual ‘diverse’ consultations examined in the final section shed some light on possible reasons why this ‘smoking gun’ evidence is not found as expected by yielding several insights on the hypothesised relationship. The first is that other factors may also determine levels of fossil fuel industry participation in consultations concerning non-regulatory climate policies, such as the possibility that the distribution of benefits, as well as the distribution of costs of a proposed policy may influence patterns of engagement displayed by targeted industries. Another alternative explanation is that fossil fuel industries view even proposed distributive policies with some distrust as they may regard them as signals of greater government involvement in the sector and the market.

This latter explanation is corroborated by deeper understanding of contextual factors that shape the stakeholder ecosystem on environment, climate and energy in the UK. This includes political conflict, both between and within parties, regarding the extent of the state’s market involvement in the area of environmental and climate policy. When governments signal a weakening of their ideological and practical commitment to the environment and climate, fossil fuel interests are arguably empowered to object to policy instruments that they regard as interventionist and intrusive, even when they do not entail targeted coercive measure of which they would bear the cost.

The second insight provided by the case studies is that even when the overarching goal of a proposed policy is general societal and economic transition to alternative and sustainable sources of energy, regulatory policies do not attract fossil fuel industry responses unless the distribution of costs and benefits affects them directly. Consultations are often highly targeted towards specific sectors of society or industry, both in terms of language and in terms of the ways they are communicated to potential respondents (often reached out to directly by consulting agencies). As a result, not all climate-oriented consultations are accessible to, or worth participating in by fossil fuel industries. This constitutes a consequential limitation of my analysis, which compounds existing limitations related to data availability and collection, but also presents future research in this field with avenues for empirical improvement.

One option involves further restricting the sample of consultations to those that specifically target the fossil fuel industry and seek its responses. While this option narrows the universe of cases, it also affords greater focus on the patterns of documented interaction between the petrochemical establishment and policymakers. Another is to broaden the theoretical and empirical scope beyond what is aimed for here. This approach may provide a more expansive understanding of patterns of participation and influence among diverse and interconnected energy-related interests by taking into account other key participants in carbon lock-in, such as utilities and energy-intensive industries such as manufacturing and transport.

This chapter does not purport to provide evidence of influence but aims instead to identify its attempted exercise by the petrochemical industry through the institution of public consultations in a typical case among countries experiencing fossil fuel production. It does so with an eye towards broader inference regarding the importance given to this institution by actors from the fossil fuel industry. While hypothesised patterns of strategic participation are not corroborated by UK data, evidence of petrochemical industry embeddedness in public consultations, especially at company level, in this typical case allows me to infer that the hypothesised role of this institution in the exercise of fossil fuel influence cannot be dismissed.

4

Fossil Fuel Revenues and Fossil Fuel Regulation: Public Consultations in the Deviant Danish Case

Danish North sea exploration can be traced back to the discovery of oil in the Kraka field in 1966 by a Maersk-led consortium, while extraction can be traced back to the establishment of state-owned company Dansk Naturgas in 1972.[16] Oil exploration and production increased dramatically following the 1973 and 1979 oil crises, resulting in extensive geographical expansion across multiple oil fields. As a consequence of this sectoral expansion, Denmark became a net exporter of fossil fuels in 1993, with oil production reaching its peak in 2004 at levels roughly twice those of domestic consumption. Similar trends have characterised Danish natural gas production, which was at its highest in 2005. Production of both oil and gas experienced a slow decline after 2005, resulting in Denmark returning to its net-importer status in 2018, and denoting sector contraction notwithstanding the continued importance of oil and gas to the national economy (Sperling et al. 2021).

As of 2021, Denmark produces over 64,000 barrels of oil per day (bbl), ranking 49th globally among oil producers and 33rd among oil exporters (US Energy Information Administration 2021). Adjusted to a population of roughly 5.8 million people, this equates to over 24,000 bbl per capita, by which measure Denmark ranks 24th globally, above Mexico, the UK and Brazil. Therefore, while Denmark does not rank among the world's top 10 oil producers, it is characterised by a strong and highly lucrative fossil fuel sector and has been since 1972. Oil and gas revenues have since had a strong hand in reinforcing both Denmark's economy and its welfare state.

The oil and gas sector supplies the Danish state with multiple revenue streams, via a 25% tax rate on companies, via a 52% tax on petrochemicals, and via shareholder revenues from Nordsøfonden, Denmark's national oil and gas company, which amount to 20% on every license. For the first four decades of oil and gas production in Denmark, these combined revenue streams totalled around 541 billion Danish Krone (DKK), roughly equivalent to 70 billion Euro, despite commodity price fluctuations (DAMVAD 2018). The sector is estimated to employ around 26,000 individuals across its different branches, which, despite

[16]For more on the state-owned elements of the Danish fossil fuel industry, *vide* later section on 'Other Contextual Factors - State Ownership: DONG, Nordsøenheden and Nordsøfonden'.

constituting a relatively small share of total Danish employment (roughly 1%) is sufficient to tie questions of energy transition to employment-related economic considerations, particularly in the coastal area of Esbjerg and in the capital (Sperling et al. 2021).

Licenses for exploration of Danish subsoil resources have historically been granted by the Ministry for Climate, Energy and Utilities, with each license awarding one or more operators permission to explore a specific area and develop oil and/or gas production within it. Licenses are awarded either following a formal licensing round or in the event of justifiable proposed developments in an area adjacent to an existing block. The state retains a 20% share of every license via Norsdøfonden, Denmark's national oil and gas company, further embedding it in the petrochemical sector (Danish Energy Agency 2021).

19 oil and gas fields have been developed since 1972, and the sector has proliferated to include multiple pipelines, refineries and storage facilities. This has resulted in the creation of a complex network of stakeholders, ranging from the individual companies that conduct exploratory and extractive operations, such as Danoil Explorations and INEOS E&P, to the trade associations that represent them, such as Olie Gas Denmark and the Energi og Olie Forum. The stakeholder landscape is not just diverse in terms of actor type, but is also highly internationalised, with Danish-owned companies working alongside non-Danish ones such as Total E&P and Hess. The largest operators in the Danish North Sea are in fact currently Total E&P, INEOS E&P, Hess Corporation, Wintershall Holding GmbH and Dana Petroleum, of which only INEOS E&P is Danish-owned. The stakeholder topography is also evolving as key actors leave and others replace them. 2017 and 2018, in particular, were years of change, as Danish Oil and Natural Gas (DONG) divested its assets to INEOS E&P, and Maersk sold its assets to Total E&P, respectively. The sale of Shell's upstream assets to Noreco in 2019 further altered and internationalised the stakeholder landscape (Sperling et al. 2021).

Given these features of the Danish fossil fuel sector, particularly its size and centrality to the economy, and given the theoretical arguments laid out in Chapter 2, a number of expectations can be formulated regarding fossil fuel influence on Danish environmental and climate policy. The first is that the political-economic clout of the fossil fuel industry should enable it to negatively affect Danish environmental and climate policy, no matter the coercive structure of the instruments being proposed. The second is that fossil fuel interests should use the forum of public consultations – an established institution of state-society relations in Denmark – as an avenue of (at least attempted) influence. Subordinate to this is

the more concrete expectation that, as a result of their organisational, financial and professional advantages relative to the other civil society actors, fossil fuel interests should feature prominently in environmental and climate-related public consultations in Denmark. One would expect this dominance to manifest itself in the form of relative dominance among respondents (especially relative to public interest organisations like environmental NGOs) and in the form of the dominance of fossil fuel interest groups relative to individual firms. One would also expect fossil fuel actors to respond at higher rates when the environmental and climate policies being proposed entail targeted coercive mechanisms than when they entail remote ones. These expectations are reinforced by Denmark's long-held tradition of public consultation, as well as its history of corporatism and collective bargaining (OECD 2010).

Further scrutiny of the data presented in the discussion of case selection in Chapter 2, however, gives one cause to temper these expectations, as Denmark exhibits higher levels of environmentally-related taxes than any other OECD country in the sample despite having fossil fuel revenues comparable to those of the UK and other countries at the centre of the fossil fuel revenue distribution. This makes Denmark a 'deviant' case that challenges my overarching expectations of stakeholder influence.

An overview of Danish environmental and climate policy, and of recent developments in the Danish energy sector, indicates that Denmark's unusually high levels of environmentally-related taxes may in fact be reflective of a broader trend towards progressive environmental and climate policy and towards an uncommonly brisk energy transition (Sovacool 2013). This is exemplified by an ambitious configuration of policies targeting an overall 70% reduction in CO_2 emissions by 2030, the phasing out of oil and gas boilers by end users, the cessation of oil and gas exploration by 2050, the protection of marine areas involved in fossil fuel production, and the extensive development of offshore wind technologies.

The exploratory purpose of this chapter is therefore contingent on a test of the above-mentioned expectations. If fossil fuel interests are active in the consultation process, if they show a trend of participatory dominance relative to public interest organisations, and if they engage with regulatory proposals at a higher rate than they do with non-regulatory ones, this begs the question of why there appears to be a disconnect between the wealth and size of Denmark's fossil fuel sector and its highly progressive environmental and climate policy. In short: if the petrochemical sector is fully exploiting consultative avenues, why does this not translate into influence over Danish policymaking? If, on the other hand, the above trends

are not observed in the data on fossil fuel participation in environmental and climate consultations, two questions have to be addressed. Firstly, why does the fossil fuel industry fail to fully avail of the participatory opportunities afforded by public consultations? And, secondly, is this trend connected to the apparent lack of fossil fuel influence over Denmark's environmental and climate policy?

This chapter is planned around data from Denmark's digital consultation repository, and around a series of formal and informal tests that combine process-tracing methods (Van Evera 1997; Bennett 2010; Collier 2011) with statistical tools. These are aimed at corroborating or dismissing the argument that the fossil fuel industry in Denmark utilises the forum of public consultations with an intent to influence environmental and climate policy. The first amounts to an informal but essential 'hoop' test, whereby fossil fuel industry presence on consultee lists (a feature of Denmark's consultation system explained in the next section) in the sampled consultations constitutes a necessary but not sufficient prerequisite for corroboration of the above argument insofar as it determines the parameters of group access to the process. A second informal 'hoop' test is fossil fuel industry presence among respondents, without which the argument that fossil fuel groups use consultations as a venue of influence-seeking participation may easily be dismissed. This hoop is then narrowed via a more formal iteration of the test, by which the central tendency of frequency of fossil fuel industry responses (by whichever measure is most suitable given the distribution of that variable), must be non-zero for the above argument not to be rejected, as isolated participation cannot be interpreted as indicative of systematic and strategic use of the consultation forum. I refer to this as the embeddedness test. The final step is a re-test of the hypotheses derived from Chapter 2 and tested in Chapter 3 in the UK context, constituting a formal 'smoking gun' test of industry participation in consultations with an intent to influence.

The next section provides an overview of other factors of interest in the Danish context, outlining the ways in which they may inform case outcomes. This includes a discussion of Danish corporatism, of the political landscape that has shaped the ways in which parties, governments and other decisionmakers have positioned themselves relative to environmental and climate issues, and of the potential role of state ownership in defining the intensity and patterns of fossil fuel interest participation in public consultations in this issue area. The role of state ownership is discussed with specific references to the role played by

DONG, Nordsøenheden and Nordsøfonden in state-industry relations and to the implications of this role for environmental and climate policy.

The following two sections provide an overview of data collection and description and walk through the testing process described above. The final section takes a closer look at the outcome of these tests and discusses their theoretical implications, proposing a possible explanation of the fossil fuel industry's apparent failure to utilise public consultations in Denmark to their full potential in pursuit of environmental and climate policy influence.

Other Contextual Factors

Danish Corporatism

Studies of corporatism have tended to neglect Denmark despite its similarities with other Northern continental corporatist states such as Germany and Austria (Mailand 2008). Denmark has its own brand of Scandinavian corporatism which often relies on the country's small size (and consequent ease of identifying key groups and stakeholders) for its organisation. This is characterised by strong sectoral framework agreements for company-level bargaining (Due et al 1993), resulting in the state taking a backseat in industrial relations by allowing extensive social partner involvement in labour market-related decisions. While the tripartite relations (state – employers' organisations – trade unions) observed in other Northern European contexts are less strongly formalised and institutionalised in Denmark than in its Scandinavian neighbours, they have played a strong hand in shaping specific policy areas, particularly in relation to occupational pensions and activation and continuous training in labour markets (Blom-Hansen 2003; Mailand 2020). As outlined in Chapter 2, this dynamic should theoretically accentuate the role of industry (and trade unions) in environment and climate policy, hindering green transitions by placing business and employee interests front and centre – but this is not reflected in the data on environmentally-related taxes.

It has been argued that Scandinavian corporatism, as measured in terms of organised interest representation on committees appointed by government (including public boards and councils) is in decline (Rommetvedt 2017). Where interest groups were originally invited to participate in this format at all stages of the policy process – a strategy driven in part by the ideological commitment of the political left, the dominance of which has waned across Scandinavia since the 1970s and 1980s – this is no longer the case, giving rise to greater

fragmentation of interests, pluralism, and lobbying (Rommetvedt 2017). While a corporatist heritage may be expected to give industry groups residual advantages in lobbying as in other institutions of state-society relations (which, unlike tripartite relations, are directed towards parliament, rather than directly towards government), they can no longer be expected to unequivocally dominate the policymaking process.

Political Landscape: Parties and Decisionmakers

According to Ladrech and Little (2019), environmental and climate politics in Denmark have been shaped by leftist parties positioning themselves as issue owners, as well as by parties to their right responding to this strategy either by accommodating ownership or by competing with it. Given the overlap between issue ownership in Denmark and the left-right political spectrum, it is not surprising that political conflict on environment and climate has revolved not so much around the need for environmental protection and climate sustainability, but rather around the extent of the state's market involvement in pursuit of these goals. Moreover, this struggle for ownership of the policy area has largely taken place in the shadow of intra-party consensus on energy security and technological leadership on renewables (Andersen and Nielsen 2016; Eikeland and Inderberg 2016). In this regard, it is also worth noting that political systems based on proportional representation facilitate the evolution of policy agreement (formal or informal) between political parties, thereby reinforcing the credibility of their environmental and climate commitments (Lockwood 2020) and that Danish environmental and climate politics are carried out within the broader context of an overarching EU-based legislative architecture.

Left-of-centre parties, especially the Social Liberals (SL) and Social Democrats (SD), regard this issue area as key to their party identity notwithstanding the persisting importance of more traditional leftist priorities, and this drive for ownership has driven competition with the right in such a way as to strengthen the environmental and climate agenda over time. Under the SD leadership of Poul Nyrup Rasmussen (1993-2001), Denmark merged its environment and energy ministries for the first time, merging the two different agendas in a manner that overrode their traditionally conflictual policy goals. In this period, Denmark also distinguished itself among other Kyoto signatories by virtue of its ambitious targets (Ladrech and Little 2019). Pressure from the left remained essential to the maintenance of the environmental and climate policy impetus during the period 2001-2011, when it remained in the opposition (Seeberg 2016), although market-let initiatives were prioritised over state-led strategies during this period of Venstre-led government, which sought to assert

ownership of the issue area by adapting it to its centre-right ideological brand. The centre-left coalition that governed from 2011-2015 in turn retained its commitment to environment and climate despite the bleak post-crisis macroeconomic landscape. The reinstatement of Venstre-led government in 2015, along with a weakened political left, saw a slight withdrawal from ambitious environmental and climate policy goals, but this phase was short-lived, as the 2019 election and the simultaneous growth of the left-leaning Alternative Party brought this issue area back to the forefront of political competition, eventually leading to the pause of tenders for North Sea exploration (Sperling et al. 2021).

The political salience stemming from this competition for political ownership could affect fossil fuel interest participation in public consultations in two different ways. As indicated by findings from the lobbying literature, the political salience of environmental and climate issues could prompt an intensification of fossil fuel advocacy efforts in response to a growing perceived threat. On the other hand, it could also lead fossil fuel industries to judge the prospects for fossil fuel exploration in Denmark to be too negative and the level of political commitment on environment and climate too strong, reducing the perceived usefulness of engagement and opposition to reform, and instead prompting efforts at adaptation and diversification.

State Ownership: DONG, Nordsøenheden and Nordsøfonden

The Subsoil Act of 1981 lays out the legal framework for oil and gas exploration in Denmark by designating the Danish state as the sole owner of all petrochemical reservoirs; however, the state's involvement in the fossil fuel industry, despite its extensiveness, is currently geared not towards profit-seeking motives, but towards energy security goals and international leadership on renewables (Nordsøfonden 2022). State involvement in fossil fuel exploration began not long after the onset of exploration itself and the grant of a 50-year concession to A.P. Moller and the discovery of the Kraka oil field, as the 1973 oil crisis drove the Danish government to actively pursue energy security measures by granting then-newly founded state-owned company Dansk Naturgas privileges to help manage oil and gas reserves in the North Sea. The 1979 oil crisis reinforced the energy security impetus, prompting a renegotiation of the A.P. Moller concession and the start of competitive licensing rounds (Obiri and Bjeirmi 2019).

Dansk Naturgas (later DONG / Ørsted) provides an apt example of state involvement and embeddedness in the Danish fossil fuel industry. Dansk Naturgas would later become Dansk

Olie og Naturgas, or DONG, in which form, still under state ownership, it grew to become the largest energy company in Denmark and a key player in the fossil fuel sector until 2016, after which, faced with a mounting deficit and increased market pressures, it divested its ownership of Danish oil and gas fields to INEOS to focus on the development of renewable energy (especially in the form of offshore wind farms) and concluded a process of partial privatisation initiated in 2004 (OECD 2018). Even while under state ownership, however, the company's shift towards a green transition was evident: it was announced in 2009, for instance, that it was pursuing the aim of generating 85% of heat and power from renewable sources by 2040 (McKinsey 2020). The Danish state remained the company's majority shareholder even after the conclusion of the 2016 initial public offering. After rebranding as Ørsted in 2017, the company became a global leader in the development of wind energy. Ørsted has also facilitated state involvement in the fossil fuel industry at other points in the value chain. An example of this is Ørsted's ownership and operation of the oil pipeline from the North Sea to the Jutland Peninsula, where downstream processing facilities are situated (Obiri and Bjeirmi 2019).

Nordsøenheden and Nordsøfonden, both state-owned companies, were set up in 2005 through an act of parliament to administer the state's involvement in oil and gas licensing and extraction in the North Sea. In fulfilment of Nordsøfonden's objective of 'generating value for Danish society by exploiting the potential of Denmark's subsurface assets', the public fund retains a 20% share of all licences on behalf of the state, but is also the state participant in carbon storage licenses with an eye towards emissions reduction (Nordsøfonden 2022). While the public fund is administrated by Nordsøenheden, an independent public company, policy direction comes from the political sphere, especially from the Ministry of Industry, Business and Financial Affairs, under which it falls (Nordsøfonden 2022).

Although the Danish fossil fuel industry is highly internationalised, the extent of state ownership represented by these companies is such that the Danish government retains a large stake in the sector and, consequently, a strong hand in directly shaping its direction or development. This matters all the more in a context where the political landscape is driven by a left-of-centre push towards environment and climate. The state's institutionalised participation in the fossil fuel sector also has potential implications for fossil fuel interest participation in consultations on environment and climate.

The first is informational: because the state is already embedded in the industry, it has a good idea of the positions of industry stakeholders on key issues, while industry stakeholders have a clear picture of levels of political commitment on policy proposals. Moreover, the degree of state involvement in Denmark is such that the state should be less susceptible to biased information from stakeholders that might otherwise facilitate policy capture. In this context, the state should be able to drive energy politics instead of merely being responsive to trends in the energy industry. The second pertains to access: because relations between the state and industry are already well-established in via Ørsted, Nordsøenheden and Nordsøfonden, public consultations are far from the only access point for industry stakeholders to the policymaking process. It is therefore possible that these factors stemming from state ownership and involvement, when combined, reduce the incentive for fossil fuel actors to participate in the consultation process to oppose environmental and climate proposals.

Gathering Data from *Høringsportalen.dk*

All data on Danish public consultations are obtained from the *Høringsportalen*[17] website (2022), a virtual government platform that serves as a single point of access to legislative proposals, draft executive orders and consultation responses. The goal of this 'Consultation Portal', which was launched in 2005, is to improve the overall transparency and openness of the legislative process by allowing interested citizens, firms and interest groups to see which legislative proposals are forthcoming, which organisations are being consulted, and what kinds of consultation responses have been submitted. All government ministries and agencies are obliged to publish bills and executive orders, but published entries, which total 14,065 at time of writing, also include policy papers, draft regulations from the European Commission, technical standards, environmental and other impact assessments, and policy-specific guidelines, allowing the Consultation Portal to serve as a complete cross-section of the policymaking landscape in Denmark (OECD 2010).

Each entry is accompanied by auxiliary documentation, including the draft bill of executive order in question (*Udkast til Bekendtgørelse*…), as well as the consultation call or 'letter' (*Høringsbrev*), which states the purpose of the consultation, its deadline, and the address to which responses are to be sent. Documentation also includes a consultation list (*Høringsliste*), detailing all the stakeholders, (including, amongst others, trade associations,

[17] This searchable consultation portal is found at https://hoeringsportalen.dk/Hearing (accessed July 2022). As Danish governmental agencies are legally obligated to consult on bills and executive orders, this portal is effectively cross-section of all legislative activity in Denmark since 2005 (the year the portal was launched).

various other interest groups, companies, public bodies, academic institutions and individuals) that are explicitly invited to contribute a response to the consultation, although it is worth noting that the right of response is not limited to listed stakeholders. Comments on a proposed bill or executive order (*Høringssvar*) are added to the entry in the period between the submission deadline and the presentation of the bill to parliament (for executive orders) or the entry into force of the law (for other documents) and are published in 'raw' form – generally as *pdf* copies of the actual email correspondence between stakeholders and agencies. Sometimes added to this documentation is a 'consultation note' (*Høringsnotat*), that summarises the purpose of the consultation, its background, and the main points and themes emerging from consultee responses, as well as a general government response to the comments. Entries are classified (and searchable) by type (bill, EU regulation, etc.), by topic (ranging from the labour market to refugees and integration), by ministry, department or agency, by status (ongoing, closed, or archived), by publication date, or by keyword.

Although a perusal of the Consultation Portal reveals a noticeable effort at standardisation of consultation practices and of their documentation, there is substantial variation in the presentation of lists of relevant stakeholders, of lists of respondents, and of the responses themselves, which, as with the UK case in my previous chapter, poses significant barriers to an automated data-gathering approach, and requires instead an immersive approach to consultation documentation.

In conformity with the purposes of my research question, this analysis covers only public consultations classified into two topics on the Consultation Portal: 'Nature and Climate' (*Natur og Klima*) and 'Environment' (*Miljø*), which are published either by the Ministry for Climate, Energy and Utilities (*Klima, energi og forsyningministeriet*), by the Ministry for the Environment (*Miljøministeriet*), by the Environment Agency (*Miljøstyrelsen*), by the Nature Agency (*Naturstyrelsen*), and by the Ministry for the Environment and Food (*Miljø og fodevareministeriet*), numbering 629 in total, where ongoing consultations are excluded. Of these 629, however, only 375 include complete documentation of consultees (including a list of consultees, a list of respondents, and a copy of the feedback received in raw form). It is stated in the Consultation Portal that 'If there are no consultation responses at a hearing, it is probably because the responsible authority has not published the consultation responses', (translated from Danish from *Hørinsportalen.dk*)[18] meaning that ministries and

[18] Høringsportalen. 2022. 'Om Høringsportalen' https://hoeringsportalen.dk/ (accessed July 2022). Original text reads, 'Hvis der ikke er høringssvar ved en høring, er det sandsynligvis, fordi den ansvarlige myndighed ikke har lagt høringssvarene ud.'

agencies exercise considerable discretion in their publication of responses notwithstanding the obligation to publish, which extends to external stakeholders and to executive orders and legislative proposals. There is unfortunately no way of knowing whether the lack of published responses is negligent, intentional, or simply due to a lack of responses.

An overview of this usable subset of data reveals substantial variation in the range of sub-topics that are covered by environment-, nature- and climate-related public consultations, with a non-negligible portion addressing topics such as ecology, wildlife, biodiversity, hunting, and agriculture. Following reading of pertinent documentation, therefore, consultations that are environmentally-related but not relevant to the climate, to the environmental impacts of fossil fuels, or to energy transitions, are excluded from the analysis. Not to do so would give a false impression of the level of embeddedness of fossil fuel industries in the consultation process – there is no reason for fossil fuel interests to be included in consultation lists for, or to submit responses to bills pertaining to hunting seasons, for instance. Filtered by relevance, this subset yields 98 consultations that constitute the sample analysed in this chapter.

A Cross-Section of Consultation Lists: Classifying Listed Stakeholders by Type

The practice of publishing consultation lists is among the key distinguishing features of written public consultations in Denmark, and is indicative of a high level of institutionalisation and formalisation of the process, and of the state's pro-active approach to state-society relations and familiarisation with the economic and social landscape. A 2000 review of Danish consultation processes by the OECD expressed concern regarding the practice's potential exacerbation of insider-outsider dynamics, after which a marked effort was made to expand stakeholder lists to be more inclusive of varied actor types (OECD 2010).

This list-based approach is in large part facilitated by Denmark's size, with its population of around 5.8 million and a business sector numbering around 250,000 firms per most recent World Bank statistics (OECD 2010). This approach takes advantage of a compact social, economic, and governmental landscape conducive to strong state-society relations and consensus-seeking political behaviour, but is not easily scaled up. It also reflects the corporatist legacy of a system that, although evolving in nature towards pluralism, retains

the roots of social partnership between government, unions, and employers' associations (Lundberg 2013).

Because stakeholder lists constitute a key feature of written public consultations in Denmark, it does not suffice to look at responses in isolation. Failure to be listed does not preclude a stakeholder from responding (almost 20% of respondents are in fact not listed stakeholders), but it substantially reduces their probability of doing so, particularly when one takes into account the informational access provided by consultation lists according to which stakeholders are contacted directly by consulting authorities. Consequently, who responds is highly dependent on who is listed. An accurate measure of actor response rates therefore requires a catalogue of actors (classified by type) that are invited to contribute to consultations. For the 98 consultations in the selected sample, these listed consultees total 11,795 (of which 2,916 are unique observations).

For purposes of consistency, the method employed to classify these stakeholders by type is the same as that employed in my analysis of the UK case. To reiterate, I borrow Rasmussen's (2015) key distinction between interest groups and individual companies, as well as her sub-categorisation of interest groups pertaining to business and occupational interests versus those centred on identity and public interest. However, because my focus is not a broad analysis of all actor-type participation but an investigation of written public consultations as a potential avenue of fossil fuel influence, I group trade, professional, business and industry interests together as 'Trade Bodies' and identity, public interest, charity, consumer, and non-organisations as 'Public Interest Organisations'. I also add auxiliary categories for other membership organisations and non-profit institutions that don't fit either of the two categories, a category for individual companies and business actors, a category for academia and related institutions, a class for public bodies and local authorities, and an 'others' bin for actors that cannot be classified according to the above criteria. Each listed stakeholder is classified using information from their respective official online platform. As a result of this process, all listed stakeholders are assigned an 'actor type' value according to the following scheme:

1 Trade/Industry/Business/Professional Associations and Trade Unions;

2 Public Interest Organisations, Clubs, Non-Profit Groups, Charities, NGOs, and Consumer Groups;

3 Other Membership Organisations and Non-Profit Institutions;

4 Individual Companies, Businesses, Firms, and Financial Institutions

5 Academia and Think Tanks

6 Public and Semi-Public Bodies, Regulators, Local Authorities, Devolved Administrations, and Police Services

7 Other, including Private Citizens

Fossil fuel industry actors are also identified through the process of researching and classifying each listed stakeholder by type and labelled either as 'fossil fuel interest groups' (8 listed in total) or as 'fossil fuel companies' (12 listed in total). The inventory of listed stakeholders is also cross-referenced with data from the Danish Energy Agency (2021) regarding oil and gas operators in the Danish North Sea to ensure that all relevant fossil fuel companies are identified.

These data are subsequently aggregated to yield 10 variables. Variables 1-7 provide aggregated numbers of listed stakeholders for each actor type at the consultation level. A further 3 variables similarly aggregate numbers of listed fossil fuel industry groups, listed fossil fuel companies, and all listed fossil fuel industry actors at the consultation level, respectively. These variables enable subsequent calculation of response rates for each actor type.

The numbers presented in table 4.0 reflect the corporatist roots of Denmark's consultation system (Ihlen et al. 2021). On average, 120 stakeholders are invited to participate in each consultation, a number that displays a conscious effort at inclusivity and openness. Almost half of all listed consultees (47%) are trade bodies and other industry, business and professional associations, while companies represent only 14% of listed consultees. Public interest organisations such as charities, NGOs, and citizen groups, on the other hand, represent less than 9% of the total. From a utilitarian perspective, it is evident that the perpetuation of strong ties between government and trade associations allows the former to gather views more efficiently from a comprehensive cross section of economic actors than might otherwise be possible.

These data reveal another characteristic of Danish public consultations: they are used not only as a means of consulting with external stakeholders, but also as a way of consulting with internal ones (Ihlen et al. 2021). Authorities (including public bodies, ministries, agencies and local authorities) constitute almost a quarter (23%) of all listed stakeholders – more than any other listed actor type with the notable exception of trade bodies.

Variable	N	Mean	Std. Dev.	Min	Pctl. 25	Pctl. 75	Max
Category	98						
Constituent	34	34.7%					
Distributive	10	10.2%					
Redistributive	6	6.1%					
... Regulatory	48	49%					
Regulatory Dummy	98	0.49	0.502	0	0	1	1
Targeted Coercion Dummy	98	0.551	0.5	0	0	1	1
Listed Consultees (total)	98	120.357	65.392	13	78	157	338
Listed Trade Bodies	98	57.806	36.249	2	29.25	86.75	187
Listed Public Interest Organisations	98	8.663	4.751	0	6	11	28
Other Listed Membership Organisations	98	3.684	2.98	0	1	6	16
Listed Companies	98	14.194	10.386	0	7	19	44
Listed Academia	98	6.847	5.796	0	3	9.75	29
Listed Authorities	98	27	26.839	2	13	31	143
Listed Other	98	2.163	3.232	0	1	2	22
Listed Fossil Fuel Interest Groups	98	1.347	1.046	0	0.25	2	4
Listed Fossil Fuel Companies	98	1.194	1.629	0	0	2	8
All Listed Fossil Fuel Industry	98	2.541	2.101	0	1	3	10
Listed Trade Bodies (%)	98	47.349	13.718	6.061	36.563	57.341	73.529
Listed Public Interest Organisations (%)	98	7.916	3.594	0	5.711	9.424	18.421
Other Listed Membership Organisations (%)	98	2.871	1.916	0	1.676	4.196	10
Listed Companies (%)	98	11.594	7.978	0	7.062	15.101	40
Listed Academia (%)	98	5.312	3.403	0	3.233	7.237	15.741
Listed Authorities (%)	98	23.354	15.249	2.158	11.331	31.793	87.879
Listed Other (%)	98	1.605	1.939	0	0.541	2.297	11.392
Listed Fossil Fuel Interest Groups (%)	98	1.374	1.436	0	0.074	1.869	7.895
Listed Fossil Fuel Companies (%)	98	0.991	1.49	0	0	1.231	6.977
All Listed Fossil Fuel Industry (%)	98	2.365	2.196	0	1.194	2.857	10.465
Listed Actors Response Frequency	98	10.306	7.222	0	5	13.75	42
Listed Actors Response Rate (%)	98	11.739	13.267	0	4.318	14.653	100

Table 4.0: Denmark: Summary Statistics: Danish Public Consultations by Category, and by Listed Consultees

While 8 fossil fuel industry groups and 12 fossil fuel companies appear on consultation lists for the selected sample, thereby passing the first informal hoop test of access as outlined above, the rate at which they are listed is extremely low when one considers the policy area under analysis. Fossil fuel interest groups constitute only 1.4% of all listed stakeholders, while fossil fuel companies only constitute 0.9% of the total.

Data on consultation responses are gathered by referring to the raw, compiled responses, as well as the consultation note (when available) for each of the 98 consultations, with each listed actor assigned a score of either 0 (no response) or 1 (response). Because participation is not strictly limited to listed actors, unlisted respondents are added to the catalogue of actors where their 'unlisted' status is noted along with their response. The aggregated response rate for listed stakeholders is very low at 12%, and listed actors constitute 82% of all responses. Some respondents engage with the process (generally stating their approval of the proposed bill or order) but do not submit a lengthy comment. Such instances constitute 36% of all responses. The response score assigned to each individual stakeholder is subsequently used to create an aggregated measure of responses for each actor type at the consultation level. I use these values to calculate the percentage of responses by actor type (% of all responses), and to calculate response *rates* by actor type (percentage of listed stakeholders by type) at the consultation level. This allows me to understand not only the distribution of responses by actor type, but also comparative levels of engagement and participation by actor type.

The figures in tables 4.0 and 4.1 show that the distribution of responses by actor type largely mirrors the distribution of listed consultees by actor type, with trade body responses constituting almost half of all responses, responses by authorities constituting roughly a quarter, and responses by public interest organisations and by companies each totalling around 10% of the total. Fossil fuel industry responses, too, both from interest groups and from individual companies, constitute a similar share of responses as they do of listed stakeholders, thereby passing the second informal hoop test denoting participation in the process.

Table 4.2, on the other hand, provides response rates for each actor type (*number of responses for actor type x / number of times actor type x was listed * 100*), a measure which paints a clearer picture of the levels of engagement and participation of different actor types within the consultation process. This measure is used as the dependent variable in my test of hypotheses *1a*, *1b*, and *2*.

Variable	N	Mean	Std. Dev.	Min	Pctl. 25	Pctl. 75	Max
Total Responses	98	13.673	10.054	0	6	18	46
Responses, of which by Listed Actors	97	10.412	7.182	1	5	14	42
Responses without Comment	97	3.536	3.394	0	1	5	16
Responses, of which by Listed Actors (%)	97	81.589	18.604	14.286	71.429	100	100
Responses without Comment (%)	97	36.378	33.22	0	5.556	61.111	100
Trade Body Responses	97	6.134	5.203	0	3	8	31
Public Interest Organisation Responses	97	1.216	1.285	0	0	2	7
Other Membership Organisation Responses	97	0.598	0.786	0	0	1	3
Company Responses	97	1.392	2.109	0	0	2	12
Academia Responses	97	0.412	0.91	0	0	0	6
Authorities Responses	97	3.66	3.966	0	1	6	19
Other Responses	97	0.402	1.152	0	0	0	7
Fossil Fuel Interest Group Responses	97	0.134	0.342	0	0	0	1
Fossil Fuel Company Responses	97	0.062	0.242	0	0	0	1
All Fossil Fuel Responses	98	0.194	0.446	0	0	0	2
Trade Body Responses (%)	97	47.793	22.356	0	33.333	62.5	100
Public Interest Organisation Responses (%)	97	9.459	12.257	0	0	14.286	100
Other Membership Organisation Responses (%)	97	4.855	6.711	0	0	9.091	25
Company Responses (%)	97	9.016	12.229	0	0	14.286	55.556
Academia Responses (%)	97	2.141	5.257	0	0	0	40
Authorities Responses (%)	97	24.942	21.91	0	9.091	37.5	80
Other Responses (%)	97	1.794	4.599	0	0	0	25
Fossil Fuel Interest Group Responses (%)	97	1.139	3.586	0	0	0	25
Fossil Fuel Company Responses (%)	97	0.632	3.046	0	0	0	25
All Fossil Fuel Responses (%)	97	1.772	4.705	0	0	0	25

Table 4.1: Denmark: Summary Statistics: Responses by Actor Type

Variable	N	Mean	Std. Dev.	Min	Pctl. 25	Pctl. 75	Max
Trade Body Responses (% of listed)	98	15.016	15.544	0	5.081	20.625	100
Public Interest Organisation Responses (% of listed)	97	17.398	25.699	0	0	25	200
Other Membership Organisation Responses (% of listed)	82	18.148	29.903	0	0	25	200
Company Responses (% of listed)	90	19.756	75.265	0	0	15.414	700
Academia Responses (% of listed)	91	7.356	19.743	0	0	0	100
Authorities Responses (% of listed)	98	24.771	33.628	0	1.619	36.201	200
Other Responses (% of listed)	75	21.168	68.029	0	0	0	350
Fossil Fuel Interest Group Responses (% of listed)	73	11.301	27.547	0	0	0	100
Fossil Fuel Company Responses (% of listed)	59	7.839	25.941	0	0	0	100
All Fossil Fuel Responses (% of listed)	83	8.529	22.864	0	0	0	100

Table 4.2: Summary Statistics: Response Rate by Actor Type

Fossil Fuel Industry Group	Listed Freq.	Response Freq.	Fossil Fuel Company	Listed Freq.	Response Freq.
Brancheforeningen for Olie- og Gassektoren I Danmark	1	0	*Altinex Oil A/S*	2	0
Danish Offshore Industry	2	0	*BG Stone A/S*	3	0
Drivkraft Danmark	37	3	*DONG Energy A/S*	35	4
Energi- og Olieforum	28	8	*Hess Corporation*	4	0
Greenland Oil Industry Association	2	0	*HMN Naturgas A/S*	1	1
Offshoreenergy.dk	8	0	*Maersk Olie & Gas A/S*	43	0
Olie Gas Danmark	33	1	*Nordsøfonden*	4	0
Oliebranchens Miljøpulje	22	0	*Noreco ASA*	2	0
			Q8	3	0
			Dansk Shell A/S	7	1
			Statoil A/S	6	0
			Total E&P A/S	8	0

Table 4.3: Denmark: Summary of Fossil Fuel Industry Participation: Lists vs. Responses

By this measure, response rates across all different actor types for the subset of consultations analysed here never exceed 25%, with trade bodies responding on average 15% of the time, public interest organisations responding 17% of the time, and companies responding on average just short of 20% of the time. Average response rates of fossil fuel interest groups are even lower at 11%, while the response rate of individual fossil fuel companies is second lowest of all at 7%. Table 4.3 sheds further light on these numbers and details all the fossil fuel industry groups and companies in the data, contrasting the number of times each of them is called upon for input with the number of times they submitted a response. The number of responses is staggeringly low: Olie Gas Danmark, for instance, is listed 33 times but only responds once, while Maersk is listed 43 times, but never submits a response.

Classifying Consultations by Proposed Policy Type

Just as in Chapter 3, a test of hypothesis 2 also requires a measure of proposed policy type to capture the coercive mechanisms that different policies entail. Once again, for purposes of consistency, the same schema is used to classify consultations by category according to the coercive mechanisms entailed by the policies, or changes to policies, that they propose:

5. Does the consultation propose either the introduction or modification of a specific policy instrument?
- If yes, proceed to question 2
- If no, classify as ‘information gathering’
6. Is the policy instrument of which the introduction or modification is being proposed funded by public budgets?
- If yes, proceed to question 3
- If no, proceed to question 4
7. Do the beneficiaries of said publicly-funded instrument belong to select groups that will acquire material gain?
- If yes, classify as ‘distributive’
- If no, classify as ‘constituent’
8. Does said proposed instrument include specific provisions whereby funds extracted from one group or actor are transferred to another?
- If yes, classify as ‘redistributive’
- If no, classify as ‘regulatory’

The outcome of this process is presented in table 4.0. Consultations on regulatory policy constitute almost half of my sample, while consultations on constituent policies represent roughly a third. Distributive policies represent 10% of the total, and redistributive ones only 6%. This data is used to construct two binary variables. The first classifies proposed policies as entailing either targeted (1) or remote (0) coercion, where regulatory and redistributive policies fall into the former, and constituent and distributive policies into the latter category. This is used for the main test of H_2. The second classifies proposed consultation policies as either regulatory (1) or non-regulatory (0), where constituent, distributive and redistributive policies all fall into the latter category. This is used in robustness tests that are presented in Appendix 2.

Model Selection and Formal Testing

Given the relatively small sample size, my choice of statistical method of analysis for the final tests in my sequence is heavily dependent on the distribution of my variables measuring response rates of public interest organisations and of fossil fuel companies and interest groups. Table 4.2, which displays the 25^{th} and 75^{th} percentiles of these variables, provides a strong preliminary indication of their non-normality. Figure 4.0 corroborates this assessment, as does the following sequence of Shapiro-Wilk tests:

- *Test 1a* shows that the distribution of public interest organisation response rates deviates significantly from normality ($W = 0.62$, $p < .01$). As follow-up, this variable is log-transformed to account for the possible influence of outliers, but this process yields similar results ($W = 0.83$, $p < .01$).
- *Test 1b* indicates that the distribution of fossil fuel interest group response rates is also non-normal ($W = 0.462$, $p < .01$). A follow-up test on the log-transformed variable again produces comparable results ($W = 0.485$, $p < .01$).
- *Test 1c* reveals that the distribution of fossil fuel company response rates deviates from normality to a significant degree ($W = 0.324$, $p < .01$). A Shapiro test of the log-transformed variable produces a similar outcome ($W = 0.352$, $p < .01$).
- *Test 1d* shows that the distribution of total fossil fuel industry response rates is significantly non-normal ($W = 0.423$, $p < .01$). A test of the log-transformed variable produces a similar outcome ($W = 0.533$, $p < .01$).

The distribution of logged response rates, though unhelpful in resolving the issue of non-normality, is plotted in figure 4.1 for reference. Normality cannot be assumed for these

variables, indicating that they are better suited to a measure of central tendency based on median values, and to non-parametric testing of my Chapter 2 hypotheses. I select Wilcoxon signed rank tests (a non-parametric alternative to two-sample t-tests) for the above-described 'smoking gun' test.

- A 'hoop' test of embeddedness in the consultation process, however, must be passed before proceeding to test my Chapter 2 hypotheses. The purpose of this test is to either reaffirm the validity of the main argument or to eliminate it. Unfortunately, it is found that the median response rate of fossil fuel actors of all types is zero, failing to provide sufficient evidence of actor embeddedness in consultations beyond sporadic contribution.

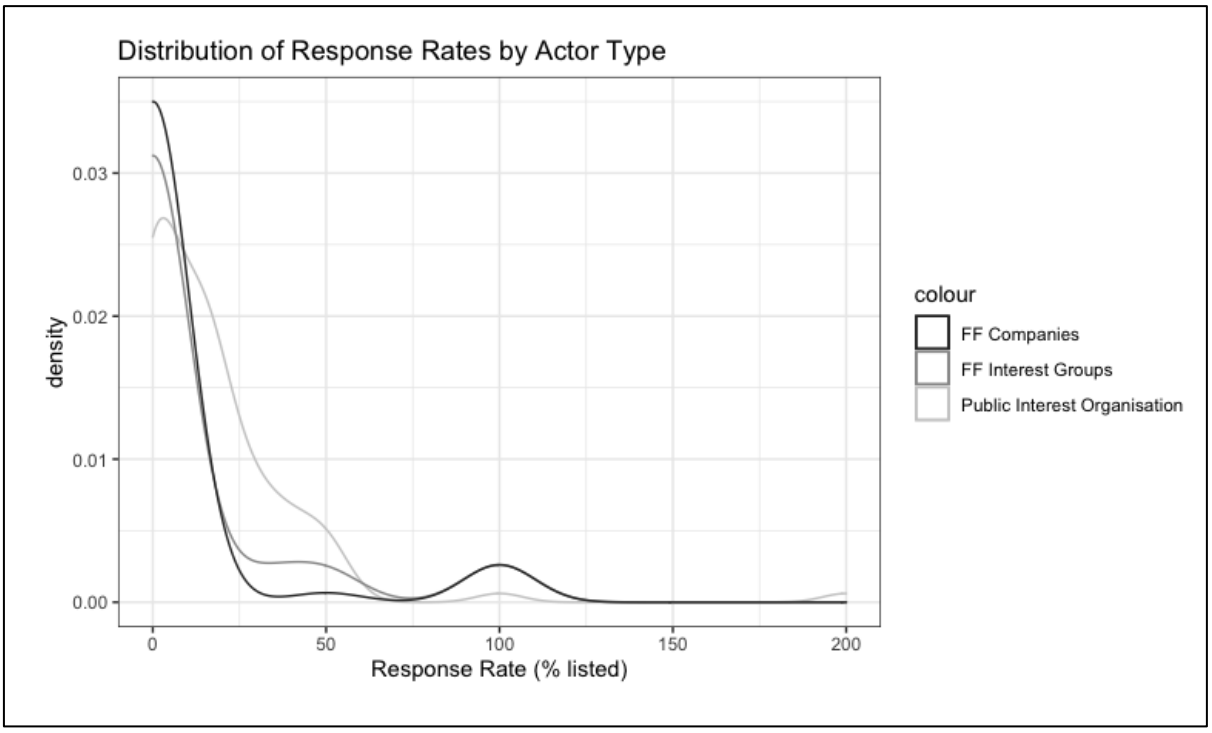

Fig. 4.0: Denmark: Distribution of Response Rates for Key Actor Types

What does this mean for my 'smoking gun' hypotheses of influence-seeking patterns? The hypotheses produced by the collective action-based theoretical framework laid out in Chapter 2 relate to the likelihood of participation of fossil fuel interests relative to that of public interest organisations, to the likelihood of fossil fuel interest group participation relative to that of individual companies, and to the differential role of a proposed policy's coercive structure in incentivising influence-seeking fossil fuel actor participation. This chapter starts with the expectation that in cases such as that of Denmark, where a sizeable and profitable fossil fuel industry is present, data on fossil fuel actor participation in public consultations should corroborate these hypotheses. As the 'hoop' test of embeddedness is

failed, however, a 'smoking gun' test is made theoretically and empirically redundant by the dismissal of the general argument of influence-seeking participation by fossil fuel actors. Nevertheless, my Chapter 2 hypotheses are tested as planned for the sake of completeness, and for the sake of reaffirming the correctness of the general rejection of the overarching argument. Results are reported below with reference to median and inter-quartile range.

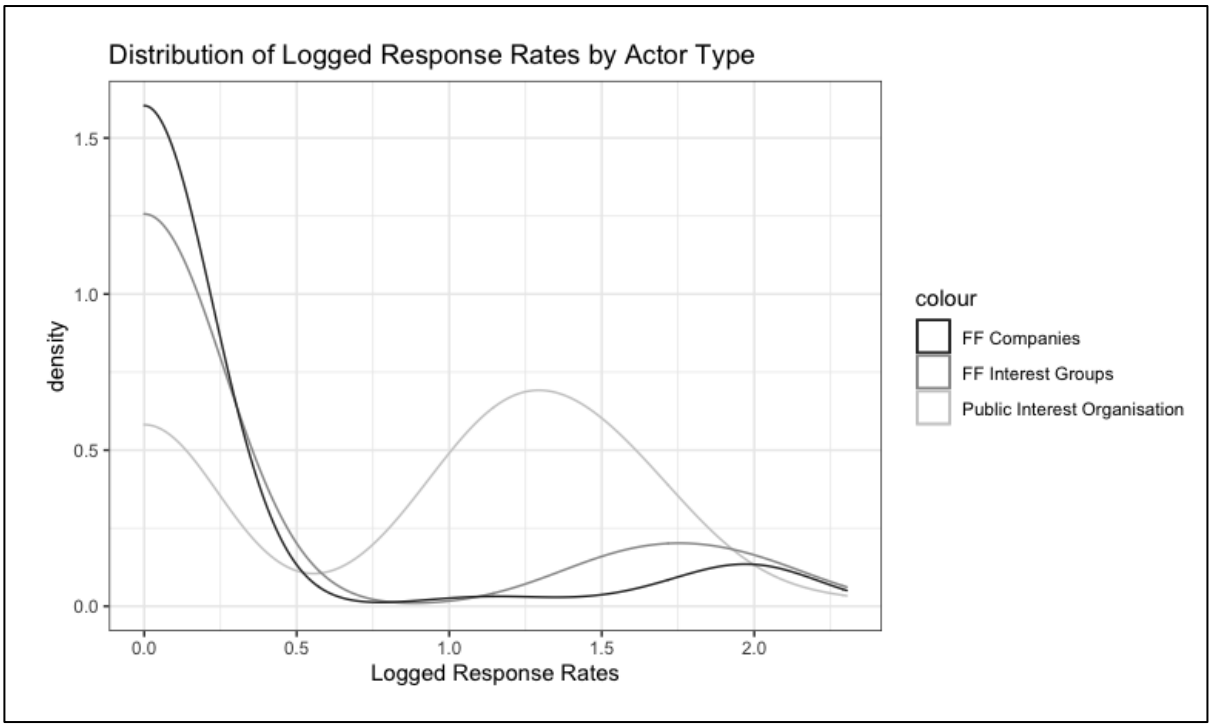

Fig. 4.1: Denmark: Distribution of Logged Response Rates for Key Actor Types

Testing H_{1a}: Actors from the fossil fuel industry are more likely to respond to environmental public consultations than public interest organisations.

- The median response rate of public interest organisations is 13.3 (*IQR* = 25), while the median response rate of fossil fuel actors (both companies and interest groups) is 0 (*IQR* = 0). The Wilcoxon test shows that the difference between these two groups is statistically significant ($p < .01$) in the opposite direction to that hypothesised.
- Significance levels and directionality remain unchanged when the same test is repeated using log-transformed response rates, where the median for public interest organisations is 1.16 (*IQR* = 1.42) and the median for all fossil fuel industry responses is 0 (*IQR* = 0).

Testing H_{1b}: Fossil fuel industry groups are more likely to respond to environment- and climate-related public consultations than fossil fuel companies.

- The median response rate of fossil fuel interest groups is 0 (*IQR* = 0), while the median response rate of fossil fuel companies is 0 (*IQR* = 0). The Wilcoxon test shows that the difference between these two groups is not statistically significant (*p* = .2449).[19]

Testing H_2: Actors from the fossil fuel industry are more likely to respond to environmental- and climate-related public consultations when the policies being proposed entail targeted coercive mechanisms than when they entail remote coercive mechanisms that displace costs onto public budgets.

The median response rate of fossil fuel industry actors (including both industry groups and companies) to policies entailing remote coercion is 0 (*IQR* = 2.78), and the median response rate of fossil fuel actors to policies of entailing targeted coercion is also 0 (*IQR* = 0). The Wilcoxon test consequently shows no statistically significant difference between responses in these two categories (*p* =.3825). Quasi-identical results are obtained when the response rates of fossil fuel interest groups and fossil fuel companies are analysed separately, and when the analysis is repeated using the dummy variable for regulatory policy as the independent variable.[20] Fossil fuel industry response rates are therefore not only extremely low, but also unaffected by proposed policy type. As expected following failure to pass the embeddedness 'hoop' test, the 'smoking gun' test is also failed, indicating that the hypothesis of participation of fossil fuel interests in public consultations as an avenue of influence can be rejected in the Danish context, reaffirming Denmark's status as a deviant case.

Interpreting Results: Evidence of (Near) Absence

The relative infrequency with which fossil fuel industry actors (both industry groups and companies) are called upon to participate in public consultation makes their low response rate all the more striking. Instead of exploiting their somewhat limited access to environmental and climate policymaking, it appears that in the Danish case, fossil fuel industry actors more frequently than not choose not to avail of their right to participate and contribute to the process, failing to pass the formal hoop test of embeddedness and participation with a median response rate of 0. Also striking is that this trend is true of consultations on policies entailing both targeted and remote coercion, especially given that

[19] Significance levels and directionality remain unchanged when the same test is repeated using log-transformed response rates, where the median for both fossil fuel interest groups and companies is 0 (*IQR* = 0).

[20] Provided in Appendix 2.

both trade bodies and companies are generally more apt to respond to consultations on regulations than to other types (figures 4.2 and 4.3). This lack of fossil fuel industry embeddedness in the consultation process indicates that this particular institution of state-society relations does not constitute an avenue of attempted fossil fuel influence in the Danish case. It also begs the dual question of why the fossil fuel industry fails to fully avail of the participatory opportunities afforded by public consultations, and whether this trend can be connected to the apparent lack of fossil fuel influence over Denmark's environmental and climate policy.

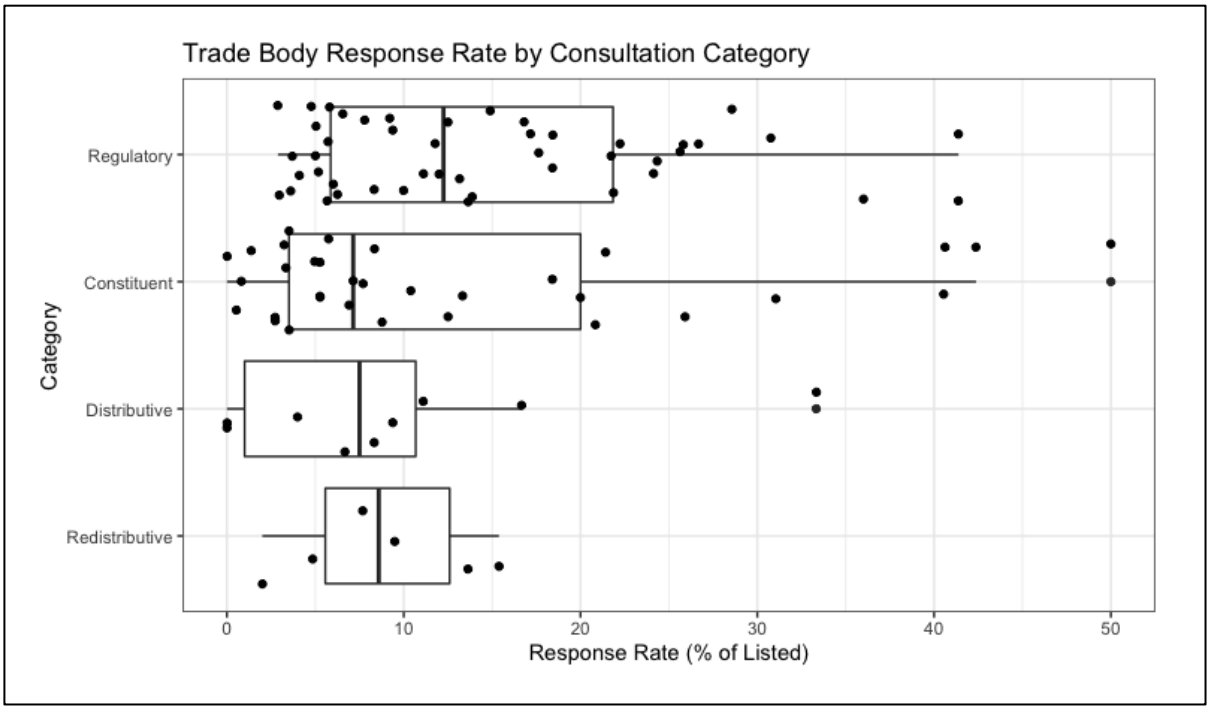

Fig. 4.2: Denmark: Trade Body Response Rates by Proposed Policy Type. Median trade body response rate for consultations on regulatory policy is 12.8 (*IQR* = 16.7), while median trade body response rate for consultations on non-regulatory policy is 7.69 (*IQR* = 12.8). This difference is statistically significant (p = .022).

One potential answer to the first question is that actors from within this industry lack the resources to keep up with and respond to consultations, even when they are invited to participate. This explanation, however, appears exceptionally unlikely in the light of the description of the fossil fuel industry in Denmark provided at the start of this chapter. While petrochemical production in Denmark has seen a slow decline since 2005 (which is also the start date of the consultation data analysed herein), the industry is still a highly lucrative one characterised by the presence of large multinational and domestic players that enjoy both organisational and financial advantages relative to other groups. Key stakeholders include not only petrochemical giants such as Total E&P and Shell, but also highly organised

stakeholder groups like Olie Gas Denmark and the Energy and Oil Forum, whose purpose is specifically that of furthering industry influence.

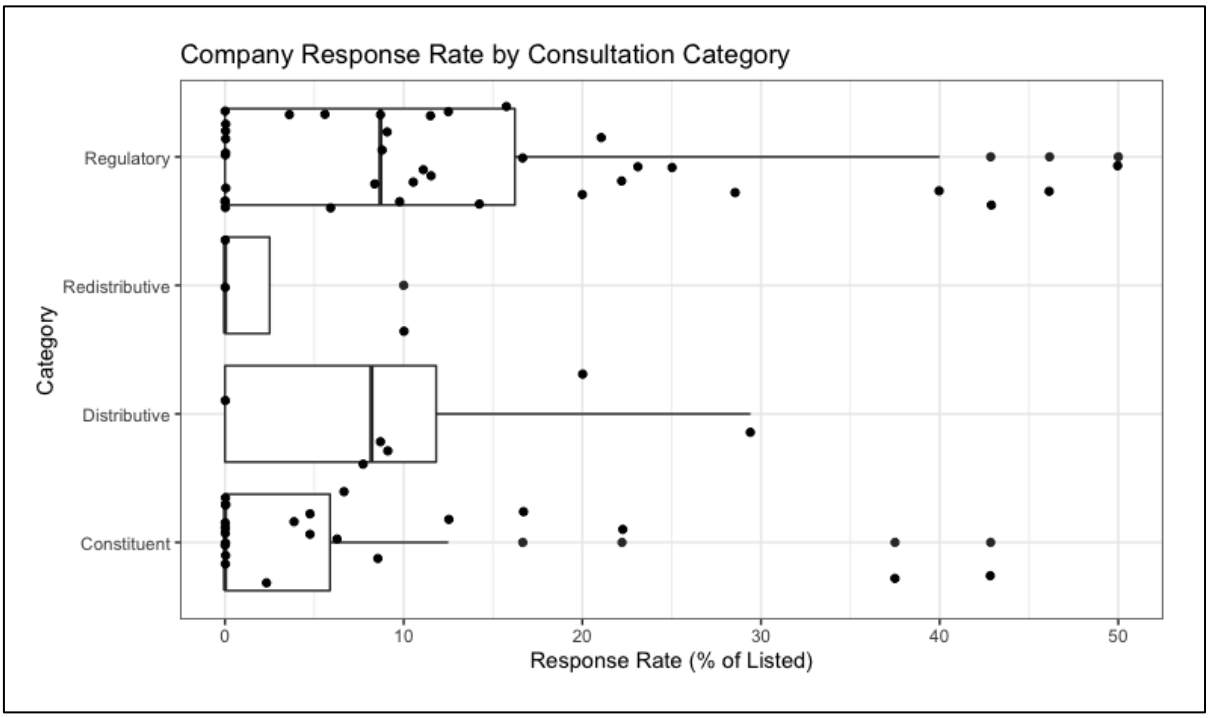

Fig. 4.3: Denmark: Individual Company Response Rates by Proposed Policy Type. Median company response rate for consultations on regulatory policy is 8.82 (*IQR* = 20), while median trade body response rate for consultations on non-regulatory policy is 0 (*IQR* = 9.09). This difference is weakly significant (p = .085).

Another alternative explanation is that while the policies being consulted upon may indeed be consequential, fossil fuel industry actors intentionally avoid the consultative forum and choose instead to respond to proposed policies in a less public setting, particularly as stakeholder responses are published wholesale on the consultation portal, making them open to public scrutiny (this explanation would imply industry access to alternative, informal fora of influence, making this argument inherently hard to verify within the scope of this study). While the possible existence of alternative channels of state-industry interaction is not easily dismissed, particularly given the quantifiable financial embeddedness of the state in all petrochemical ventures in Danish waters, this possibility is tempered significantly by the strong culture of transparency that colours state-society relations in this context (Larsen and Richter 2021). Given that Denmark does not have a lobbying law, however, this counterpoint is hard to verify.

Moreover (and perhaps more importantly from an empirical perspective) it also appears unlikely that Denmark-based fossil fuel enterprises benefit from a concealed, informal and preferential channel of influence given recent policy developments in the country, whereby

taxation of environmentally harmful behaviours is the highest in the OECD and where plans for a total cessation of fossil fuel exploration are already under way. If a better, alternative avenue of influence exists, this is not visible in policy outcomes.

Another possible explanation is that the environmental and climate policies being consulted upon by the Danish government are not sufficiently consequential to the sector (that is to say, they do not impose sufficiently concentrated costs on fossil fuel producers) as to incentivise their response. This explanation draws from sceptical arguments according to which public consultations may be described as exercises in window-dressing, adding a veneer of legitimacy to pre-established outcomes while gatekeeping access to the formulation of key decisions (see for instance Ballamingie 2009). In the case of Danish environmental and climate policy, this may be construed at a well-intentioned attempt at shielding progressive regulatory policies from fossil fuel capture.

As interesting as this possible explanation may be, it is also extremely unlikely, as Danish government ministries and agencies are bound by official guidelines to consult on all executive orders and legislative proposals. While reporting of respondents is not always complete (as evidenced by the sample utilised in this analysis), the obligation to consult cannot be circumvented, which constrains potential attempts at prevention of policy capture via limitation of stakeholder access.

This leaves another alternative explanation: that while the policies being consulted upon are in fact consequential to the fossil fuel industry, potential consultees from this sector perceive participation as ineffective, and therefore not worthwhile. While the previous explanation hinges on a lack of access to the consultative process, this explanation hinges on a perceived lack of access to decision-making. Given the patterns observed in the consultations sampled in this chapter, this explanation is the one that seems most likely.

The case of the consultation on the 'Order on Supervision and Fees for Oil and Gas Installations', published on 25/05/2015 by the Environment Agency[21] illustrates the point that consequential regulations targeting offshore industries do form part of this sample, and that while actors from the fossil fuel industry are called upon to submit a response, they often choose not to. Of the 86 stakeholders listed by the publishing agency in this case, 9 are from the fossil fuel industry (amounting to 10% of the total – the highest in the sample). 3 of the

[21] Environmental Protection Agency. 2015. 'Bekendtgørelse om tilsyn, gebyr mv for olie- og gasanlæg [Order on Supervision and Fees for Oil and Gas Installations]', Copenhagen: Ministry of Environment of Denmark https://hoeringsportalen.dk/Hearing/Details/52587 (accessed July 2022)

9 are industry groups (Energi og Olieforum, Offshoreenergy.dk and Oil Gas Denmark), while 6 are fossil fuel companies (DONG Energy Hess, Noreco, Maersk Drilling, Maersk Training, and Maersk Olie og Gas).

The inclusion of the above groups and companies among relevant stakeholders is understandable in the light of the regulatory substance of the executive order, which concerns the implementation of the Offshore Directive, with particular focus on supervision and monitoring of offshore operations by relevant authorities. The draft executive order published in this consultation includes provisions for fees charged on offshore operators by the Danish Environmental Protection Agency for the official revision of the former's plans for emergency preparedness. It also includes a number of provisions on the facilitation of facility monitoring and supervision by offshore operators, stipulating that operators must provide access and transport for all inspections. Moreover, it proposes to impose informational obligations on offshore operators in the form of annual reporting to the Danish Environmental Protection Agency. While responses to this proposed executive order are submitted by the Danish Accreditation Institution, the Lawyers' Association, the Danish Employers' Association, the Data Supervisory Authority, the Ministry for Business and Growth, the Ministry of Defence, the Nature Agency and the Ministry for Taxation, no responses are submitted by fossil fuel industry actors (neither industry groups nor companies). It is therefore possible that the lack of fossil fuel actor responses to consequential regulation may be due to a perceived lack of potential for influence via public consultations, which reduces the incentive to participate.

Other cases illustrate the point that even when fossil fuel actors do respond to consequential regulatory consultations, their input tends not to have much bearing on the outcome of the consultative process. The proposed 'Amendment of the Executive Order on Large Combustion Plants', published on 10/03/2014 by the Environment Agency,[22] for instance, establishes the legal limitation of certain air pollutant emissions (primarily SO_x and NO_x) from large combustion plants, and states that the provisions on emission limit values for large new combustion plants are also prerequisites the plant's environmental approval. DONG Energy and the Energi og Olieforum are listed among the 120 consultees, and both are among the 14 stakeholders that respond to the proposals.

[22] Environmental Protection Agency. 2014. 'Ændring af bekendtgørelse om store fyringsanlæg [Amendment of the Executive Order on Large Combustion Plants]', Copenhagen: Ministry of the Environment of Denmark https://hoeringsportalen.dk/Hearing/Details/23636 (accessed July 2022)

While the Enegi og Olieforum states it has no specific comments on the proposal, DONG Energy provides extensive feedback, the focal point of which is resistance to SO_2 emissions limitations, and the suggestion that the executive order should be amended to set a higher emissions cap for the pollutant given developments in gasification technology as an alternative to biofuels. The company underscores its point by stating that the same concern had been expressed in response to a previous proposed executive order on the same topic. The Danish Environmental Protection Agency, however, responds to this comment by stating that emissions limits stipulated by the directive will not be relaxed, and that the executive order will remain unchanged in this respect. Responses such as this one indicate that the potential of fossil fuel actors to influence policy outcomes via their participation in consultations is relatively limited, providing an important signal to stakeholders from this sector as to whether their participation is worthwhile.

Most illustrative of this signalling dynamic between government and industry, perhaps, is the political process that led to the establishment of the 2020 North Sea Agreement, which announced the termination of all extractive activities in the North Sea by 2050. According to Sperling et al. (2021), the 2019 election, partly as a result of the emergence of the Alternative Party, was characterised by a strong focus on environmental and climate issues, as a consequence of which the 8th round of tenders for North Sea exploitation was paused. While economic impact assessments helped pave the way to the North Sea Agreement, these authors argue that key to its introduction was the convergence of not only diverse public interest organisations, but also that of diverse political parties which came to a relative consensus on the issue. The same authors argue that the signalling effect of this political convergence could be seen in the ensuing behaviour of the fossil fuel industry, as even before the 8th tendering round was officially terminated, 8 out of 9 oil firms that had previously expressed an interest in participation voluntarily withdrew from the process. Per Sperling et al. (2021),

> The oil firms judged the future of oil and gas production in Denmark too uncertain and the political signals too negative. Some of the companies began developing a more long-term perspective, turning their attention to renewable energy and CCS/CCU. (17)

It is therefore likely that, in a parallel vein, political consensus and multipartism, by signalling high levels of environmental and climate policy commitment, may discourage participation in consultations by altering fossil fuel actors' perception of the scope for resistance and policy influence. This may in turn result in less resistance to proposed

environmental and climate policies, in more progressive industry strategies (such as DONG's divestment of its oil and gas assets and evolution into Ørsted as a pioneer of offshore wind energy), and, consequently, in a more efficient energy transition than seen elsewhere in the OECD.

The potential role of political signals in shaping incentives for fossil fuel actor participation in consultations on environmental and climate policy is likely to be exacerbated by two contextual factors that are essential to a well-rounded understanding of the Danish case: the political landscape vis-à-vis this policy area, and state ownership of key entities in the Danish fossil fuel landscape. The political salience of the environment and climate remains high as a result of inter-party competition for political ownership of this issue area, and inter-party differences tend to revolve around the justifiable extent of state intervention, and not around policy goals. This is likely to act as a strong signal of political commitment on environmental and climate issues.

State ownership of entities like DONG and Nordsøfonden is likely to further reinforce this tendency, as embeddedness in the industry provides the state and the fossil fuel sector with mutual awareness of the other's goals and commitment levels. It also provides multiple access points for interaction with the state, along with varied formal and informal networks of communication, all of which may strengthen political signals and alter the incentives experienced by fossil fuel actors in terms of potential participation in public consultations on environmental and climate policy.

Conclusions

My purpose in this chapter has been to test the argument that public consultations are used by fossil fuel industries as an avenue of influence in the case of Denmark, which I identify as a deviant case on the basis of data on environmental and climate policy and the political-economic clout of fossil fuel industries. Denmark's rates of environmentally-related taxes, which are higher than those of any other OECD country in the sample, in contrast to its average but above-median rates of natural resource rents, make it a puzzling outlier that defies theoretical expectations. As a deviant case, Denmark constitutes an opportunity to shed light on dynamics beyond those I hypothesise in Chapter 2 regarding the relationship between fossil fuel interests and environmental policy outcomes.

In my analysis of the UK as a typical case based on the same set of data, I find that, despite a lack of smoking gun evidence of fossil fuel industries systematically using public

consultations as an avenue of influence, substantial evidence points to the relevance of this hypothesis, concomitant with expectations. In the case of Denmark, however, my expectations based on the theoretical outline of drivers of stakeholder participation presented in Chapter 3 are mitigated by knowledge of progressing environmental and climate policies in this specific context, giving me reason to believe that these expectations might not be met.

In this chapter, I test these expectations using a series of formal and informal tests using data on environmental and climate-related consultations extracted from the Danish government's online consultation portal, *Hæringsportalen.dk.* I fail to find sufficient evidence either of fossil fuel dominance over other actors in environmental and climate-related public consultations, or of a level of fossil fuel embeddedness in the process indicative of systematic consultative participation with an eye to policy influence. Two connected questions emerge from these findings, namely, 'Why does the fossil fuel industry fail to fully avail of the participatory opportunities afforded by public consultations?' and, secondly, 'is this trend connected to the apparent lack of fossil fuel influence over Denmark's environmental and climate policy?'

Following an overview of potential explanations for this lack of embeddedness and of their respective likelihood, I posit that signals from policymakers of environmental and climate policy conviction, especially given the multipartisan nature of the policy process in Denmark, are what causes fossil fuel industry actors to attribute less value to the influencing potential of public consultations, and to therefore invest less time and money in participating in this context. Based on the results presented here, I contend that evidence from this deviant case indicates that attempts at influence, although facilitated by institutions that provide access to the decision-making process, may ultimately be contingent on signals projected by the state regarding the intensity of their policy commitment, which colour consultees' perceptions of the usefulness of participation (or, indeed, of resistance). The importance of signals of political commitment is underscored by contextual factors that must be taken into consideration in the Danish case, notably the heightened political salience stemming from an inter-party competition for political ownership of environmental and climate issues and the increased informational awareness between state and industry as a result of state ownership of key entities in the fossil fuel landscape.

While there are of course great limits to extrapolation from case studies (especially so with deviant cases), a study of abnormal tendencies provides great potential for theoretical expansion and refinement. The case I have presented in this chapter indicates that future

analyses of fossil fuel influence on environmental and climate policy would do well to take levels of political commitment into account (a measure which would have to go beyond discursive prioritisation of the environmental and climate policy area). The Danish case also allows me to conclude this chapter on a somewhat bullish note by indicating that, while fossil fuel interests do have the capacity to bias state-society relations and the policymaking process, their ability to do so is not altogether unbridled.

5

Fossil Fuel Interests and Environmental and Climate Program-to-Policy Linkage in the OECD: Evidence of Patterns of Influence

This chapter develops the theoretical ramifications of the pattern of influence-seeking behaviour hypothesised in Chapter 2 by drawing out arguments about actor behaviour into ones about actor influence on the policy landscape and on policy outcomes. This expansion of the overarching theoretical argument is anchored by the following question: *does political-economic clout enable fossil fuel industries to negatively influence environmental and climate policymaking and outcomes?*

The concept of 'influence', however, entails an inescapable empirical quandary insofar as it implies an invisible counterfactual: it is only truly possible to measure the influence of one actor on another if we have access to information on the course of action that the latter would take without the former's interference. This counterfactual remains elusive in political science research despite methodological progress and innovative use of proxies.

While evidence from the energy transition literature indicates that that the opposition from the petrochemical sector makes policies targeting environmental and energy sustainability less likely (Jakobsson and Bergek 2004; Aklin and Urpelainen 2013; Downie 2017), it falls short of capturing influence in the true political sense of the word. The lobbying literature, on the other hand, provides evidence of systematic efforts by the fossil fuel industry to influence the political process (Supran and Oreskes 2017; Brulle 2018; Grasso 2019; Stokes 2020; Brulle et al. 2020), but often struggles to frame findings in terms of outcomes and effects on the policy landscape. Similarly, the patterns of influence-seeking participation hypothesised in Chapter 2 of this dissertation and analysed in Chapters 3 and 4 are less meaningful without a discussion of the ways in which influence-seeking behaviour by fossil fuel industries can translate into influence on environmental and climate policy.

In this regard, the influence of fossil fuel industries on environmental and climate policy is better described as a product of fossil fuel industries that leverage their political and economic clout to influence policymakers whose goals are shaped by party systems and by the mandates granted via the electoral process. Central to an improved understanding of said influence, therefore, is an understanding of what governments (and the parties that compose

them) would do vis-à-vis the environment and climate in the absence of fossil fuel influence or of other structural extraneous factors.

Environmental and climate issues have permeated party systems, particularly in developed countries, and their influence is no longer limited to green parties, as mainstream and traditionally class-based parties are under electoral pressure to respond to and embrace the 'green' cause, albeit to varying degrees (Cao and Ward 2014; Spoon et al. 2014). Such pressure is justified insofar as government action is essential to adaptation to, and mitigation of, the plethora environmental issues stemming from climate change. According to the Intergovernmental Panel on Climate Change, 'Closing the adaptation gap requires moving beyond short-term planning to develop long-term, concerted pathways and enabling conditions for ongoing adaptation to ensure timely and effective implementation', and 'Political commitment and follow-through across all levels of government are important to accelerate the implementation of adequate and timely adaptation actions' (Pathak et al. 2022, 84 - 98).

Yet governments often don't live up to their environmental expectations, particularly in the field of environmental protection and climate mitigation, posing a problem for normative democratic ideals and exacerbating the existential threat that climate change poses to current and future generations. The IPCC highlights in its 2022 report that the fossil fuel projects already in existence exceed the global limits within which climate change can be controlled, drawing attention to the need for a cessation of fossil fuel exploration (IPCC 2022). The end of fossil fuel exploration, however, does not appear to be on the horizon, as evidenced, for instance, by new North Sea licensing rounds in the UK and by the proliferation of hydraulic fracturing technologies in the US and beyond (Frondel and Hovarth 2019). This discrepancy calls into question the robustness of political commitments vis-à-vis environmental and climate policy and once again draws attention to fossil fuel industries which have a vested interest in exerting their influence on the environmental and climate policy process.

The existence of a linkage between political parties' electoral programmes and the policies they implement following their election into government (henceforth program-to-policy linkage or PPL) is central to mandate theory and provides a viable and valuable pathway to the measurement of fossil fuel influence insofar as electoral programmes provide us with some insight as to the nature of the all-important invisible counterfactual. The fundamental implications of mandate theory are that failure to acknowledge public opinion results in electoral defeat, while failure on the part of governing parties to fulfil promises made at

election-time translates into a failure to be re-elected (Riker 1990; Powell 2000; McDonald and Budge 2005). The assumption that democratic government should be characterised by at least some degree of program-to-policy linkage is a pervasive one, and it is not unfounded: the linkage exists, and is often stronger than one might expect (Budge and Hofferbert 1990, 1992; Mansergh and Thomson 2007). It is also found that the strength of the linkage varies contingent on institutional factors such as presidentialism vs. parliamentarism (Royed 1996), coalition vs. single-party government, the contents of government agreements, and the allocation of ministerial portfolios (Costello and Thomson 2008; Thomson et al. 2012). The influence of vested interests on the fulfilment of mandates in select policy areas, however, remains understudied, resulting in a gap in the literature wherein the influence of fossil fuel actors on environmental and climate policy may be studied.

As explored in the theoretical framework constructed in Chapter 2, the literature on collective action and interest representation has long established that organised groups can and do influence public policy, and that that some groups do so more effectively than others as a result of the degree of concentration of the interests, resources, and expertise they represent. These insights have bled into other literatures, including that on democratic institutions, contributing to a shift away from concerns regarding tyranny of the majority and towards concerns regarding political and policy capture by small, powerful and wealthy groups (Offe and Wiesenthal 1980). It has also had a marked effect on the literature on interest group formation and lobbying, where the logic of collective action has taken the form of quasi-conventional wisdom (Baumgartner and Leech 1998; Hart 2004). This stands in sharp contrast with the lack of inclusion of vested interests in research on mandate fulfilment.

In the context of environmental and climate policy mandates, this gap in the literature is all the more noteworthy when one takes into account evidence pointing to the role of incumbent industries in slowing down shifts towards sustainable economic models and clean energy (Jakobsson and Bergek 2004; Aklin and Urpelainen 2013; Downie 2017) and to systematic efforts by the fossil fuel industry to bias and capture the political process (Supran and Oreskes 2017; Brule 2018; Grasso 2019; Stokes 2020; Brulle et al. 2020). Moreover, while part of the literature on PPL looks at the fulfilment of individual policy promises (Ferguson 2012; Praprotnik 2017; Thomson et al. 2017; Pétry and Duval 2018; Duval and Pétry 2019; DeMarco 2020), it notably fails to take into account the ways in which different policy types containing heterogenous coercive mechanisms (e.g., targeted vs. remote) present stakeholders with diverse incentives for influence-seeking participation in the policymaking

process. I argue that the study of environmental and climate PPL, further to enabling an assessment of fossil fuel influence, also enables an assessment of how the extent of this influence varies depending on policy types (or, more specifically, on the coercive mechanisms they entail).

It is also worth noting that but for a notable contribution (Leinaweaver and Thomson 2016), the prevalent approach in the literature on PPL is that of taking as the dependent variable policy outcomes in all policy areas in a single country over time (Kalogeropoulou 1989; Walgrave et al. 2006; Moury 2011; Artés 2013; Kostadinova 2013). The innovation proposed in this chapter is therefore partly a methodological one, as I evaluate variation in policy outcomes in a single policy area, that of the environment and climate, in developed countries over time. This goes hand-in-hand with my novel theoretical contribution, which combines insights from diverse bodies of literature – on energy transitions, on collective action, on policy analysis, and on mandate (specifically salience) theory – into innovative hypotheses.

The aim of my approach in this chapter is to build on earlier arguments regarding systematic patterns of influence-seeking behaviour by fossil fuel industry actors in institutions of state-society relations like public consultations. In doing so, I seek generalizable conclusions regarding the extent of fossil fuel influence on environment and climate policy by looking at the effect of fossil fuel industries on the relationship between politicians' promises and policies regarding the environment. To this end, I look at variation in environmental and climate policy in OECD countries between 1994 and 2016, assessing the effect of the salience of the environment in electoral manifestos on environmental and climate policy and the moderating effect of the political-economic clout of the fossil fuel industry on this relationship. Moreover, I look at the variegated effect of the clout of fossil fuel industries on PPL contingent on policy type, building on arguments concerning the ways in which the different coercive structures of different policy types provide fossil fuel industries with different sets of incentives for participation. This enables me to translate the discussion of patterns of participation into one of patterns of influence.

Capturing Patterns of Influence

The Literature on Program-to-Policy Linkage

The existence of a linkage between political programs and subsequent policymaking is central to normative democratic ideals. According to mandate theory, best articulated in Downs' Economic Theory of Democracy (1957), policy decisions made by elected representatives must reflect the stated preferences of their constituents as part of an interactive principal-agent relationship. Most importantly, it is assumed that representatives feel obligated to act in accordance with the principal's will out of fear of future sanction in the form of electoral defeat. It is also assumed that this sanctioning mechanism functions as a result of politicians' fundamental desire to be elected and re-elected.

Evidence of the existence of this relationship has been sought in the literature using two different approaches. The first is the salience approach, according to which parties distinguish themselves from each other by strategically emphasising and de-emphasising themes and policy areas in a manner most profitable to themselves. Pledges in and of themselves are not the units of analysis: what matters is variation in thematic emphasis (Robertson 1976; Budge 1982; Budge and Farlie 1978). This approach is central to the design of the Manifesto Project (Volkens et al. 2018), a data source which will be central to my empirical approach.

The second is the pledge approach, which conflicts directly with the salience approach in terms of its assumptions regarding the way parties position themselves in party systems and regarding the manner in which they structure their electoral programs. While the salience approach assumes that parties emphasise issues they 'own' and de-emphasise those they don't to signal their priorities to voters, making the promises themselves trivial, the pledge approach takes as its units of analysis individual pledges made by parties in electoral manifestos (Ferguson 2012; Praprotnik 2017; Thomson et al. 2017; Pétry and Duval 2018; Duval and Pétry 2019; DeMarco 2020). Underlying this is the assumption that voters pay attention to individual pledges and their fulfilment, rather than simply looking at parties' relative prioritisation of different policy areas. The pledge approach literature has come a long way in falsifying the assumption of salience theorists that the nature pledges does not matter (Mansergh and Thomson 2007).

While the assumptions underpinning these approaches, as well as the methodological complexities they entail, are fundamentally different and competing, findings from the two

different branches of the literature are not in all instances incompatible. Studies based on the pledge approach do in fact find that parties mostly talk past each other, reinforcing salience theory's claim that direct confrontation is seldom a party's strategy of choice (Mansergh and Thomson 2007). Most importantly, neither the salience approach nor the pledge approach falsifies the most basic implication of mandate theory: that there exists a linkage between programs and policy – in fact the linkage is in most cases stronger than one might expect (Budge and Hofferbert 1990, 1992; Mansergh and Thomson 2007, respectively).

There is strong evidence that institutional factors affecting the decision-making environment can explain variation in the degree to which commitments are fulfilled. The presidential / parliamentary distinction between the US and Britain is found to account for superior pledge fulfilment in Thatcher's Britain than in Reagan's US, for instance, as even with united government, the legislative process in the US is far more complex than in Britain (Royed 1996). Findings from the Netherlands and Ireland indicate that other institutional factors, notably coalition vs. single-party government, the contents of government agreements in multiparty systems, and the allocation of ministerial portfolios all have a role to play in determining policy outcomes (Thomson 1999, 2011; Costello and Thomson 2008; Thomson et al. 2012.)

Coalition government, too, appears to clearly undermine pledge fulfilment, a finding which Mansergh and Thomson (2007) attribute not to the nature of pledges made by coalition partners, which are not found to be conflictual in the vast majority of cases, but rather to limitations on the allocation of financial resources. Some other factors also found to make pledge redemption more likely are the prevalence of proposals related to incremental change, a healthy macro economy, and consensus among different political parties (Mansergh and Thomson 2007). Analyses of pledge redemption in Sweden, meanwhile, have revealed that contrary to expectations, minority governments are highly capable of fulfilling electoral promises (Naurin 2002, 2014; Håkansson and Naurin 2016). Similar analyses of Greece (Kalogeropoulou 1989), Belgium (Walgrave et al. 2006), Italy (Moury 2011), Spain (Artès 2013), and Bulgaria (Kostadinova 2013) reinforce these findings.

From a theoretical standpoint, however, there is need for a more nuanced understanding of the relationship between the political-economic clout of specific vested interests and the policy areas by which they are most affected. As outlined in Chapter 2, the literature on collective action offers several valuable theoretical insights on the patterns interest group

activity that may well be applied to research on PPL in order to obtain a measure of fossil fuel influence on environment and climate policy.

On the other hand, studies from the energy transition literature report that the resistance of incumbent fossil fuel industries makes the implementation of policies aimed at long-term environmental and energy sustainability less likely (Jakobsson and Bergek 2004; Aklin and Urpelainen 2013; Downie 2017), yet they have not framed their research question in terms of PPL and its potential moderators. These studies point to a negative effect but fall short of capturing political influence in the true sense of the word.

To describe this dynamic as 'influence' is to argue that the roots of this relationship are political, and that public policy failures are symptomatic of the active and strategic political pursuit of influence by the petrochemical sector. Moreover, attempts at a true measurement of influence are further complicated by the invisibility of implicit counterfactuals. Influence as understood in the context of fossil fuel interests and environmental and climate policy is best understood with reference to Lukes' (1974) first dimension of power. The power of *A* over *B* is only remarkable if *B* is persuaded to do something he would not otherwise be inclined to do. Consequently, knowledge of the preferred path of B in the absence of A is necessary to measure the degree of influence at play – this counterfactual is seldom tangible in the real world (Dahl 1957, Lukes 1974, Lowery 2013). In the same vein, the exercise of influence by interest groups is only truly measurable when a measure of what would happen in the absence of the interest groups is available. Cross-national analyses come close to mitigating this problem, yet the literature on the effects of fossil fuel energy incumbents on environmental and climate policy is characterized by a failure to measure what this might look like in the absence of these vested interests.

The gap in the literature on PPL isn't limited to the role of interest group influence, but also extends to the role of policy type as a determinant of the strength of PPL. Several contributions analyse the fulfilment of individual policy promises (Ferguson 2012; Praprotnik 2017; Thomson et al. 2017; Pétry and Duval 2018; Duval and Pétry 2019; DeMarco 2020) but fall short of formulating broader theoretical arguments as to the way that different coercive mechanisms contained in different policy types (e.g., targeted vs remote) present vested interests with heterogenous incentives to engage in influence-seeking behaviour. As articulated in H_3, this point is one that this chapter also aims to address.

The next section reprises H_3 as first outlined in Chapter 2 and fleshes it out using the central tenets of salience theory, along with the insights this dissertation has drawn from collective action, energy transition, and policy analysis literatures, to create a framework through which the patterns of fossil fuel influence on environmental and climate policy can be assessed. This framework will be disaggregated into the three testable hypotheses around which the rest of this chapter is developed.

Salience, Fossil Fuel Interests, and Policy Types: Theoretical Expectations

H_3: As the political-economic clout of fossil fuel industries increases, so does their negative influence on environment and climate policy, but the relationship is stronger for environment and climate policies entailing targeted costs than for ones entailing remote costs that are displaced onto public budgets.

My point of departure in grappling with this general hypothesis is the literature on mandate theory, and more specifically on salience theory, because it provides a framework for understanding stakeholder influence in terms of why and how the policies enacted by governments may vary in practice from the goals they set out to accomplish in their electoral campaign. It does so by facilitating the measurement of the invisible counterfactual (i.e., 'What would governments do without interference or outside influence?') across countries and over time.

According to the assumptions of salience theory,[23] the strategy of competing parties is one that markets to the best of their ability their strategic advantage of perceived ownership or competence in particular issue areas. This varied strategic emphasis manifests itself in the form of variation in the relative salience that that different parties attribute to the same policy area. Within the framework of salience theory, this variation in selective emphasis is the main mechanism through which parties communicate their policy differences and delineate their position in the broader political space (Budge 2001; Dolezal 2014). There exists therefore a linkage between programmes and policy (the programme-to-policy linkage, or PPL) that is underpinned by voters' expectations regarding the relative prioritisation of issue areas and regarding parties' abilities to competently address the problems within them. Failure to address these problems potentially harms the party in the short- and long-run by tarnishing its record of mandate fulfilment. This approach underscores the role of the

[23] For more detailed discussion of the assumptions of salience theory, see Budge 2001; for a test of the assumptions, see Dolezal et al. 2014.

electoral manifesto, which remains the most systematic articulation of party platforms despite the varied media through which parties channel their electoral messaging.[24]

Naturally, the importance of fulfilling such expectations does not preclude the existence of factors that moderate parties' ability to do so. Several of these (mainly institutional) variables are identified in existing scholarship. The literature on the role of interest groups in state-society relations, however, indicates that the presence of vested interests may constitute an important factor that affects PPL in addition to traditional political and institutional variables.[25]

The underlying logic of state-society relations is that, via diverse channels of interaction, executives can gain expert knowledge and legitimacy from interest groups in return for access to and influence on public policy (Bouwen 2003: Coen 2007; Bunea and Thomson 2015). Yet interest representation is seldom truly pluralist and egalitarian (Schattschneider 1960), and the determinants of interest group activity and involvement, underpinned as they are by the logic of collective action (Olson 1965), explain most sources of bias in state-society relations. Given that collective action is facilitated when interests are concentrated rather than diffuse, it is not surprising that this literature points to actor type is an important determinant of group activity (and, consequently, of group effectiveness and influence). Groups representing specific interests, such as business, labour, and occupational interests, face lower barriers to coordination and mobilisation than groups representing diffuse interests, such as public interest groups and identity groups (Binderkrantz 2005, 2008; Rasmussen 2015).[26] This means that, all things being equal, groups representing concentrated interests are better-organised, better-coordinated, better-funded, and more highly professionalised than groups representing diffuse interests, and that they are in consequence also more effective in exerting their influence when they interact with the state in both informal and formal institutional settings.

[24] An inherent limitation of relying on the assumptions of salience theory is its basis on the false premise of majoritarian politics. Not all systems are two-party systems. Nevertheless, this does not negate the role of salience and issue ownership in structuring party competition, even in multiparty systems.

[25] A moderating variable (M) may either enhance or diminish the strength of the relationship between variables X and Y. Given the theoretical reasons outlined in this section, the presence of enhancing effects by the fossil fuel industry in the realm of environmental policy substantially less likely than that of diminishing moderating effects.

[26] Recent works have brought the differences between specific and diffuse interests, and between insider and outsider strategies into sharper focus, highlighting the relationships between group type, organisational form, access, and preference attainment. For more on this, see Maloney et al. 1994; Broscheid and Coen 2003; Dür and Mateo 2016; Berkhout et al. 2018; Fraussen et al. 2015.

This argument complements the main theories and findings of the energy transition literature. The central dependent variable of this field is the structural transformation of energy systems away from carbon-based fuels and towards renewable and sustainable sources of energy. Consensus as to the form that this energy transition should take, or indeed as to how it may be achieved, is yet lacking; however, there is a general agreement that such a transition, though necessary, faces significant obstacles despite the urgency of the issues that it would help solve (Sovacool 2016). The primary obstacle to an effective energy transition is per this literature the structural carbon lock-in that characterises developed economies, which perpetuates the strategic advantage of fossil fuel industries and undermines the attempted shift towards clean energy technologies (Unruh 2000). Path dependence allows this lock-in to persist, and governmental action is urgently required to correct its negative externalities, which the market alone is ill-equipped to handle. The urgency with which climate issues need to be addressed, underscored by quasi-incontrovertible evidence of the catastrophic outcomes of unchecked CO_2 emissions and global warming (IPCC 2022), lies in stark juxtaposition to the structurally embedded difficulties that need to be overcome to rewire developed economies so that they may grow sustainably (Hess 2014).

This literature points to incumbent industries, particularly in the fossil fuel sector, as the primary agents of resistance against an effective energy transition, and indicates that policymakers are often prevented by actors in these industries from implementing those policies that would facilitate and accelerate it most efficiently. Several studies trace the influence of these actors on environmental and climate policy. A key finding is that the probability of a shift towards a low-carbon or carbon-neutral economy is reduced when the utility sector is dominated by hydrocarbons that perpetuate energy path-dependence (Aklin and Urpelainen 2013). This is corroborated by evidence of energy incumbents resisting energy transitions in such a way as to slow them down or even change their path (Hess 2013).

Falkner (2008) finds that across the central issues in environmental policy (climate change, ozone depletion and agricultural biotechnology) policy is increasingly being shaped by growing business and industry involvement in the international political arena, arguing that firms are exhibiting an increased level of internationalisation, organisation and professionalisation, whereby environmental regulation becomes a component of their general business strategy. In a similar vein, Hughes and Urpelainen (2015) find that the relative ‘political-economic clout’ (a term which will is reprised in this analysis) of fossil fuel and renewable energy industries is key to understanding climate policy implementation

in advanced economies. Complementarily, business actors from oil, coal and gas sectors, as well as utilities industries, are found to negatively affect transitions towards greener energy models across the US (Downie 2017).

While, increasingly, scientific evidence points to a need for long-term 'green industrial strategies' that enable energy transitions to take root, government intervention in pursuit of this normative goal is neither straightforward in theory nor in practice, and the risk of policy capture and consequent policy failure is ever-present (Pegels and Lütkenhorst 2014). Success stories of such broad-visioned green strategies are found in cases such as Germany and Denmark, but they are in the minority, and Tvinnereim and Ivarsflaten (2016) find that patterns of support for such strategies are connected to fossil fuel industries in more ways than one. Beyond the influence exerted directly by the industries themselves, the position of such industries in national economies is such that the employment they generate in the downstream sector prejudices individuals connected to it against fossil fuel regulation.

Studies of the behaviour of business and industry in the political arena allow further refinement of these observations by defining actor preferences in terms of interests and institutions. The main contributor in shaping interests vis-à-vis a given policy is the structure of costs and benefits that it entails. Different environmental policies also have different distributional and coercive effects for different business and industry actors (Keohane et al. 1998). This provides business and industry actors with diverse incentives for participation in the political process, meaning that organised actors find ways to oppose policies when they find that a policy will not benefit them or when it targets them with specific costs (Falkner 2008). The institutional structures within which actors are embedded further affect their preferences by ordering their practices in path-dependent ways. Contingent on their preferences, actors are motivated to participate in the political and policymaking process to influence its outcome, deploying one or a combination of the strategies at their disposal . These range from coalition mobilisation via coordination with other actors, to lobbying via formal and informal channels, and public campaigns that aim to reframe issues and policies (Baumgartner et al. 2009; Kraft and Kamieniecki 2007; Downie 2017).

Central to a complete understanding of the way the distributional and coercive effects of a policy initiative shape the incentives for stakeholder participation are the arguments on the relationship between policies and politics outlined in Chapter 2. To reiterate, key to the policy analysis literature is the principle that a focus on policy goals is meaningless without an understanding of the ways in which state power is effected via a given policy, along with

the core tenet that the conscious selection of specific instruments, rather than being incidental to the political process, shapes politics by determining which actors engage with the state, in which arena, and with what effect or extent of influence.

All such policy decisions entail a coercive element. Policies that aim to change the behaviours of specific groups or individuals entail targeted coercion, usually in the form of economic sanction. Such policies most notably include regulatory instruments (e.g., CAC regulation, carbon taxes, emissions taxes) that provide targeted groups with a strong incentive to mobilise, engage with the state, and protect their interests. Where the groups in question benefit from organisational and financial advantages that concentrate and facilitate advocacy and mobilisation near the decision-making centres of power, this incentive to engage translates into influence, policy capture, and systematic bias in the policymaking process.

The actors that are more likely to prevail in this instance are political parties and other actors with a vested interest in logrolling. Where policies aim to change the behaviour of large collectives by changing the environment of conduct entail remote or diffuse coercion, usually in the form of economic sanction that is displaced onto the taxpaying public. Such policies most notably include distributive instruments (e.g., subsidies for renewable energies) that, lacking a specific sanctioned group, do not incentivise stakeholder participation in the same way.

Furthermore, as a result of the organisational and financial advantages, not only are groups representing concentrated interests a priori more likely than others to engage with the state, and more likely to engage with the state on policies designed to target them with an explicit coercive burden: they are also more likely, as a result of the structural and informational advantages from which they benefit, to be successful in exerting their influence on such policies than parties representing diffuse interests.

Drawing on these insights, I argue that fossil fuel interests are structured in such a way as to facilitate influence on the policymaking process, insofar as they are characterised by a high level of concentration of interests, of professionalisation, and of funding. I also posit that environmental and climate policy, which is increasingly centred on climate change mitigation measures (and, inevitably, on a transition away from fossil fuels) presents vested interests within this industrial sector with the threat of obsolescence, motivating their mobilisation in a bid to slow down the economic transition towards carbon-neutrality.

Based on the principles of mandate theory, I contend that parties motivated by a desire to be re-elected strive to make good on their programmatic environmental discourse once they are in government, resulting in an environmental and climate program-to-policy linkage. I also argue, however, that as the political-economic clout of the fossil fuel industries grows, it allows them to exert a negative effect on this linkage and, in turn, on the implementation of environmental and climate policy. I borrow the term 'political-economic clout' from Hughes and Urpeleinen (2015) to conceptualise the political power of fossil fuel industries as derived from their material economic wealth. I choose this conceptualisation to reflect latent power as described by Lukes (1974) and the bases of power as described by Simon (1953), and I propose to define the source of fossil fuel industries' political power to be their role and size within the broader economy.

I contend that this political-economic clout translates into organisational and financial strengths that improve this sector's ability to influence the policymaking process, not only by virtue of the benefits and donations that might be utilised to tip the scales behind closed doors, but also by virtue of making its members more formidable and effective actors within the realm of institutionalised processes of state-society relations. Consequently, this concentration of vested interests is likely to act as a negative moderator of environmental PPL despite a growing public appetite for environmental protection in liberal democracies.

Moreover, as outlined in Chapter 2, I argue that besides mobilising effectively in response to the existential threat posed by policies aimed at green transitions thanks to its organisational and financial advantages, the fossil fuel sector engages in a pattern of influence-seeking advocacy that is contingent on policy type. The incentive for mobilisation for petrochemical industries is stronger when the policies being proposed entail targeted coercive measures rather than remote ones – i.e., the threat to fossil fuel industries is greater when they bear the cost of a given environmental or climate policy, than when it is displaced onto the public budget. Fossil fuel industries also benefit from levels of concentration of interests, of capital and of professionalisation that enable them to dominate information flows and bias policymaking processes surrounding targeted coercive measures such as regulatory instruments, which are usually highly technical. When the policies being proposed entail coercive measures that are displaced onto the taxpayer, however, as is the case with distributive measures such as subsidies, the incentive for fossil fuel industries to engage with the process is not as strong. This permits other actors, such as political parties and groups with a vested interest in the preservation of the entitlements from which they benefit, to prevent total capture by fossil fuel industries.

My expectations may be reiterated in the form of the following hypotheses, which express the same expectation as that originally articulated in the form of H_3 in Chapter 2 while disaggregating its moving parts in such a way as to make them testable:

H_{3a}: As the salience of the environment in party manifestos increases, so does the subsequent implementation of measures aimed at environmental protection.

H_{3b}: As the political-economic clout of fossil fuel industries increases, so does their negative moderating influence on the relationship between the salience of the environment in party manifestos and environmental and climate policy.

H_{3c}: The relationship hypothesised in H_{3b} is stronger for environmental and climate policies entailing targeted coercive mechanisms than for ones entailing remote coercive mechanisms that are displaced onto public budgets.

Research Design

I test the above hypotheses by quantitatively analysing variation in environmental PPL in OECD countries between 1994 and 2016. A panel dataset is created by combining key variables from OECD, World Bank, and Manifesto Project data, then analysed using a model that incorporates country and year fixed effects to account for unobserved heterogeneity between countries. This section details all data sources for key variables, units of measurement and operationalisation, and the rationale underpinning choices of control variables. Data, along with the overarching theoretical framework, constitute a unifying thread in this project: measures of environmental policy and of the political-economic clout of fossil fuel industries, on which cases are selected for Chapters 3 and 4, operationalise dependent and explanatory variables in this chapter, further binding the three empirical sections together and adding an ulterior layer of coherence to the project.

In order to reject the null hypotheses, I expect to observe a positive relationship between environmental and climate salience and environmental and climate policy, both when the policy being measured entails targeted coercion of specific actors (as with environmentally-related taxes), and when it entails remote or diffuse coercion displaced onto public budgets (As with environmentally-related subsidies). I also expect to observe a negative moderating effect of the relationship between salience and policy (regardless of policy type) as the political-economic clout of the fossil fuel industry increases. Finally, although I expect this moderating relationship to persist across policy types, I expect it to be stronger when the

dependent variable measures environmental or climate instruments of targeted coercion than ones of remote or diffuse coercion. The creation of an interaction term between measures of programmatic environmental salience and measures of political-economic clout of the fossil fuel industry is therefore essential to this test. Summary statistics for all variables described below are displayed in table 5.0.

Operationalising Environmental and Climate Policy

H_{3c} sets out to capture the dichotomy between environmental and climate policy types of targeted coercion and of remote coercion. As illustrated in figure 2.0, instruments of targeted coercion most frequently take the form of regulatory (e.g., CAC, carbon taxes, removal of fossil fuel subsidies) and redistributive policies (e.g., energy taxes that vary by industry), and it is worth remembering here that the line between these two instrument types is blurred insofar as all regulation involves some element of redistribution. Instruments of diffuse coercion, on the other hand, take the form of distributive (e.g., green subsidies, soft loans, tax exemptions) and constituent policies (e.g., establishment of climate agencies, educational campaigns), with analytical focus most often prioritising distributive instruments given the 'meta-policy' nature of constituent policies. A test of H_{3c} therefore requires the use of two measures of the dependent variable to capture this dichotomy in the way the coercive power of the state makes itself manifest.

The first iteration of the dependent variable of environmental and climate policy is operationalised using OECD Policy Instruments for the Environment (PINE) data on environmentally-related taxes as a percentage of GDP. This variable was already introduced in the Chapter 2 discussion of case selection. To reiterate, this is defined as 'any compulsory, unrequited payment to government levied on tax bases deemed to be of environmental relevance, i.e., taxes that have a tax base with a proven, specific negative impact on the environment' (OECD 2017). An environmentally-related tax places an added cost on polluting goods and behaviours, with the effect of reducing consumption of, and engagement in, such environmentally harmful goods and behaviours. As defined by PINE documentation, this tax base includes a heavy climate-oriented component insofar as it measures taxes on energy products, on transportation and vehicles, and emissions including ozone-depleting substances.

This measure yields 610 observations of the dependent variable, with environmentally-related taxes averaging around 2.5% of GDP across OECD country-years between 1994 and

2006. Although the distribution of these observations is relatively normal, figure 5.0 illustrates some peculiarities of the data, with Denmark standing out as a relative outlier at the upper end of the distribution, and Turkey exhibiting the widest range of observations indicative of the greatest amount of policy change over the course of the 12-year period under study.

The second measure of environmental and climate policy is also obtained from the PINE database. Environmental subsidies provide a measure of environmental and climate policy with remote / diffuse coercive mechanisms, where costs are displaced onto the taxpaying public. In this data, 'A subsidy is environmentally motivated if it reduces directly or indirectly the use of something that has a proven, specific negative impact on the environment. It can take many forms: VAT exemptions on electric cars, feed-in tariffs on renewable energy generation, tax credits for environmentally relevant investment, or provision of public funds for nature conservation projects' (OECD 2017). In the original PINE data, subsidies are disaggregated by subtype. The original data are therefore aggregated to the country-year level before use in this analysis, where the unit of measurement is net subsidies, measured in millions of Euros. This measure yields 185 observations of the dependent variable, with environmentally-related subsidies averaging around 267.8 million Euros across OECD country-years between 1994 and 2006.[27]

Manifesto Project Data: Programmatic Environmental Salience

The salience of environmental issues in electoral programmes is measured using the Manifesto Project dataset (Volkens et al. 2018). The main Manifesto Project dataset provides a comparative content analysis of the manifestos of more than 1000 parties in 50 countries from 1945 onwards. Variable Per501, used in this project, is the variable pertaining to the salience of environmental protection. Per501 cannot be used in its raw form in this analysis, however, as its unit of analysis (party–election year) is not compatible with the country-year level of analysis employed here. The weighted average value of parties that formed coalition governments is therefore obtained using data from the ParlGov project (Döring et al. 2012), which provides information on political parties, election results, and governments for all EU and most OECD countries, enabling the calculation of a mean party salience score (Per501) for all parties classed as 'cabinet parties' in ParlGov data based on the number of seats

[27] It is worth noting, however, that the dataset on environmental subsidies is smaller in size and covers only 185 country-years (compared to 610 for environmentally-related taxes), constituting an important empirical limitation.

obtained. Non-election years are assigned the value of the most recent election year. This results in the creation of a new independent variable providing the salience of the environment in the combined manifestos of the whole government for each country-year. Figures 5.0 and 5.1 illustrate that although these two variables exhibit similar distributions, the rank of countries under study exhibits little resemblance, making the hypothetical intervention of a moderating variable more plausible.

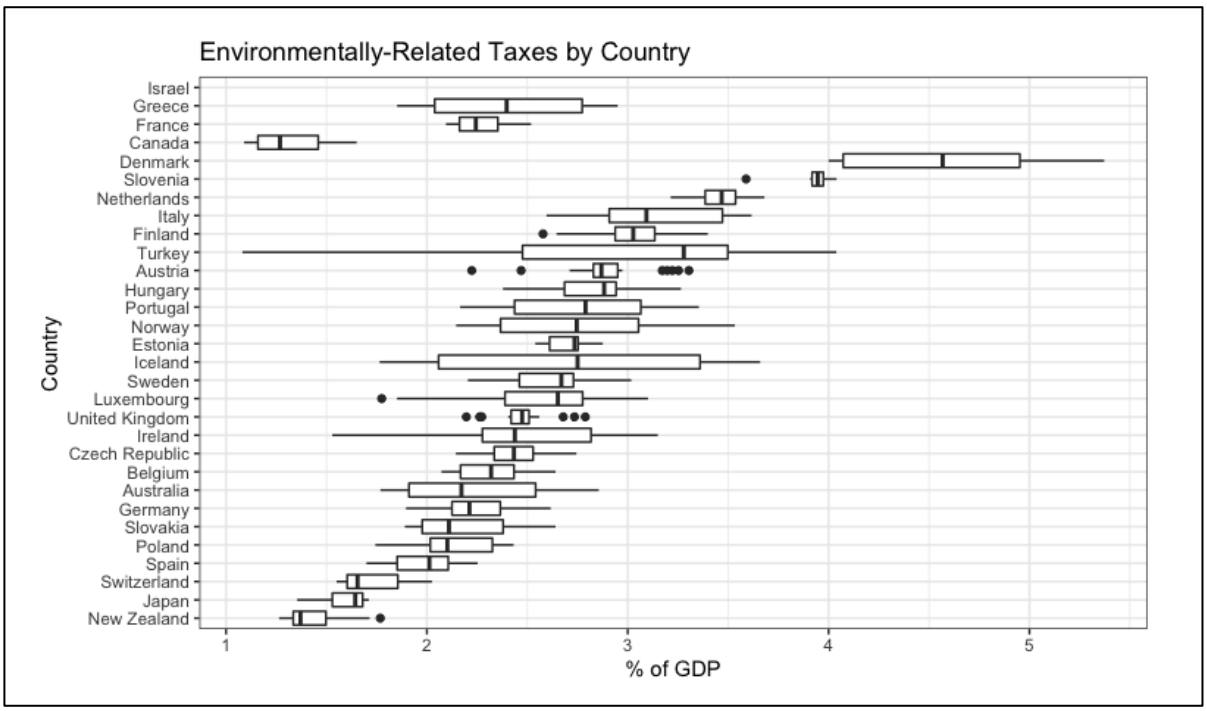

Fig.5.0: Distribution of Environmentally-Related Taxes (% of GDP) by country

ParlGov data are also used to extract values of programmatic environmental salience for prime ministerial parties to serve as a control variable. This accounts not only for the role of prime ministerial parties in shaping policy, but also provides a built-in measure of majority vs. coalition government when included in a model along with the weighted mean measure of programmatic salience. This variable acknowledges the executive institutional constraints described by Mansergh and Thomson (2007) and Leinaweaver and Thomson (2016).

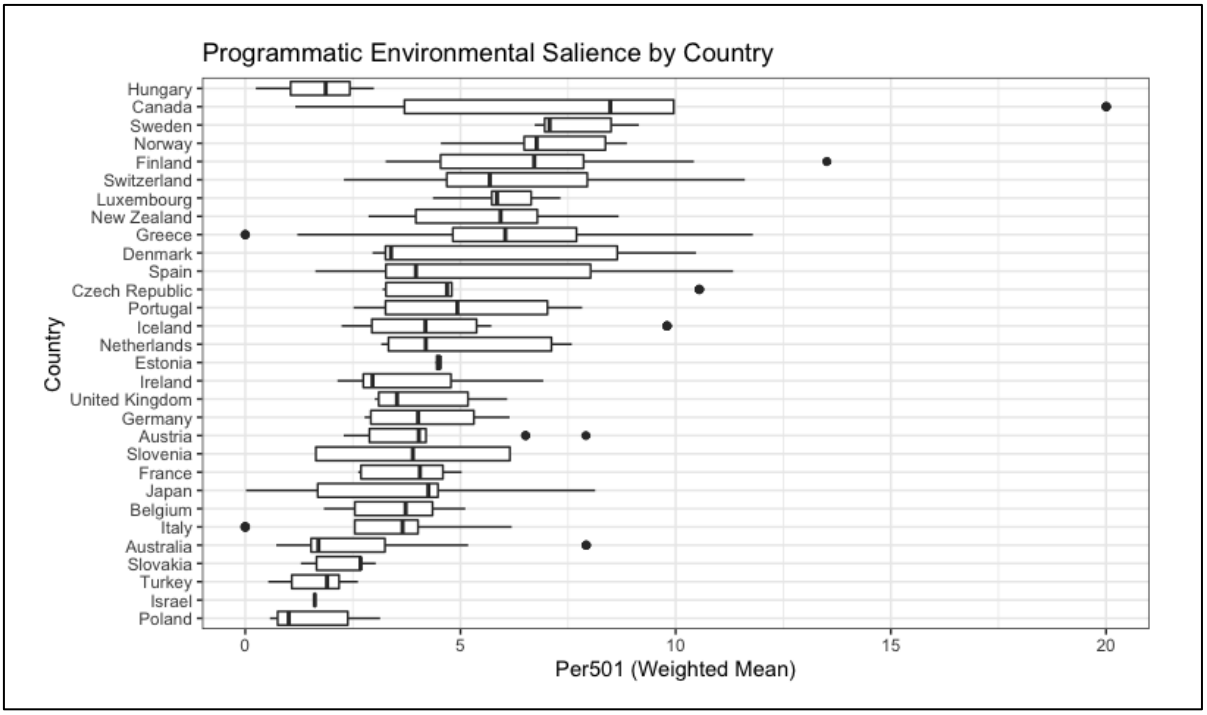

Fig 5.1: Distribution of Programmatic Environmental Salience (weighted mean) by country

Political-Economic Clout of Fossil Fuel Industries

The political-economic clout of fossil fuel industries is measured by using revenues from extractive industries as a proxy, employing World Bank data on natural resources rents as a percentage of GDP. This choice of measurement is primarily made following Simon's (1953) distinction between the exercise of power and the bases of power: the former denotes the ability of A to compel B to do something that B would not otherwise do, while the latter describes the resources that enable A to do so. This part of the project assesses whether the bases of power of fossil fuel producers ultimately result in the exercise of power in environmental public policy. Natural resource rents as a share of GDP constitute a reliable proxy of the kind of capital that fossil fuel producers can leverage when attempting to influence policymakers. The chosen measure provides the sum of oil rents, natural gas rents, coal rents (hard and soft), mineral rents, and forest rents (World Bank 2022). This yields 588 observations of the independent variable with an average of 0.96% of GDP per country-year derived from the sale of natural resources. As can be seen in figure 5.2, the variable exhibits a marked positive skew.

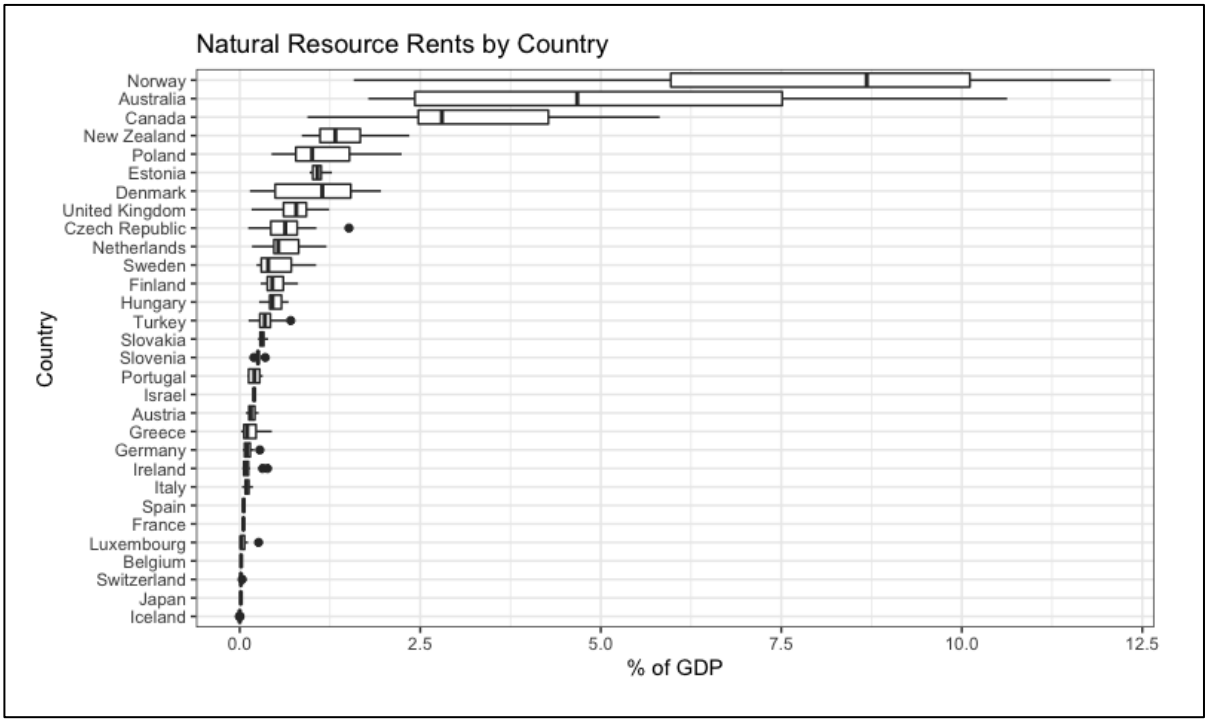

Fig 5.2: Distribution of Natural Resource Rents (% of GDP) by country

This variable is also incorporated into the model in the form of an additional interaction term (Salience*Natural Resource Rents) evaluate the significance of the hypothesised moderating effect.

Other Control Variables

Fossil fuel reliance is likely to have an effect on both programmatic environmental salience and on environmental and climate policy (in both its operationalisations) and is therefore added to the model as a control variable in the form of country-year rates of fossil fuel consumption (as percentage of total) obtained using World Bank data.

Numerous studies have also pointed out the relevance of economic (left-right) ideology in shaping individuals' (and therefore parties') environmental preferences, highlighting a divide between left- and right-leaners. Environmental protection comes with connotations of excessive market regulation that raise eyebrows among right-leaning voters, making policymakers from right-leaning parties less willing implement them. The perception that there is an inherent trade-off between environmental protection and growth exacerbates this reticence. There is more willingness on the left, in contrast, to accept greater state intervention and to deprioritise growth (Dunlap et al. 2001 p. 34; McCright and Dunlap 2011a, 2013). If parties have to choose between interventionist environmental policies and growth, leftist parties are more likely to do so than rightist parties. The left-right ideological

lean of parties is obtained using the 'left-right' variable in the ParlGov database (Döring and Manow 2019). It is a 0-10 scale mean value on the left/right dimension, which is in turn based on data from Castles and Mair (1983), Huber and Inglehart (1995), Benoit and Laver (2006) and Chapel Hill Expert Survey (Bakker et al. 2022). As with programmatic environmental salience, a weighted mean is obtained using data on seat distribution in parliament.

The literature on environmental policy tends to highlight the strong relationship between a healthy macroeconomy and progressive policymaking (Sadorsky 2009; Bowden and Payne 2009; Apergis and Payne 2010; Sebri and Ben-Salha 2014). A control variable for economic growth is therefore added to the model using World Bank data. Tests are also run using alternative measures of economic performance (Appendix 3).

Additionally, the political range encompassed by OECD countries calls for a control variable for democratic performance, which is included in the form of Polity scores. Inclusion of this variable is warranted insofar as the value of program-to-policy linkage as a means to re-election is inherently contingent on a country's democratic credentials.

Variable	**N**	**Mean**	**Std. Dev.**	**Min**	**Pctl. 25**	**Pctl. 75**	**Max**
Environmentally-Related Taxes (% GDP)	610	2.524	0.737	1.082	2.06	2.901	5.372
Environmentally-Related Subsidies	185	267.846	398.628	0	0	515.3	2049.9
Programmatic Environmental Salience (w. mean)	614	4.674	2.82	0	2.773	6.481	20.004
Natural Resource Rents (% GDP)	618	0.946	1.984	0	0.058	0.807	12.061
P.M Party Environmental Salience	618	3.985	2.811	0	1.942	5.382	16.047
Fossil Fuel Reliance	588	73.672	19.784	10.255	64.055	88.552	98.526
Left-Right Lean (w. mean)	593	5.321	0.702	3.102	4.916	5.659	7.801
GDP Growth	618	2.471	2.874	-9.132	1.253	3.924	25.163
Polity Score	595	9.753	0.929	-4	10	10	10
EU (binary)	618						
Non-EU	212	34.3%					
EU	406	65.7%					

Table 5.0: Summary Statistics

Finally, EU environmental policy has seen substantial and dynamic development that is perhaps unrivalled by any other supranational or intergovernmental organisation. It must be noted however that 'No other European Laws are so frequently violated as environmental directives' (McDonald and Borzel 2017), and that the existence of laggards in implementation helps us do away with the assumption that all EU member states are exactly on the same level of environmental policy stringency. Knill et al. (2010) also find that international integration is only one of several factors that influence the adoption of green policies by governments, and that several aspects of party politics, particularly parties' environmentalist policy positions, affect the number of policies adopted. Nevertheless, the theoretical framework outlined here would be incomplete if it did not account for the role of EU legislation in shaping environmental policy outputs. EU membership is coded as a dummy variable.

Figure 5.3 displays the results of a test for collinearity among the above-described variables. Although a few values are found to be significant, most of them are close enough to zero as not to prejudice the interpretation of regression results that follow. Most importantly, natural resource rents and the weighted mean for programmatic environmental salience are only weakly correlated ($r(612) = .15$, $p < .01$), allaying concerns that the effect of fossil fuel industries on environmental policy is absorbed by parties at the program-formulation phase. The weighted mean value for programmatic environmental salience, however, is found to be strongly positively correlated to the programmatic environmental salience of prime ministerial parties ($r(612) = .69$, $p < .01$). This is kept in mind at the modelling and hypothesis-testing stage, where the robustness of the chosen models is assessed by performing the test twice, once including and another excluding the control variable in question.

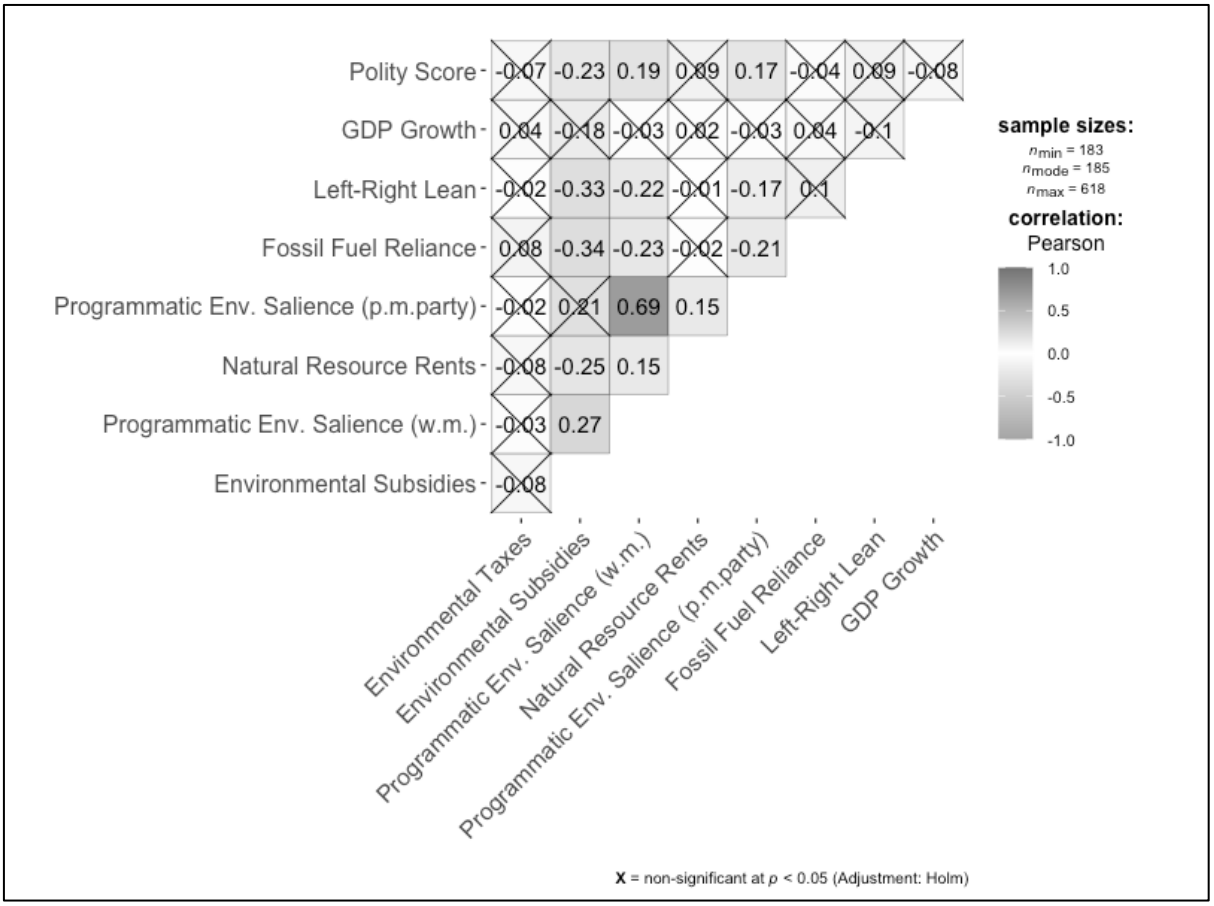

Fig. 5.3: Correlation Matrix (Pearson's r)

Hypothesis Testing

To reiterate, I hypothesise that programmatic environmental salience has a positive effect on the implementation of environmental policy, and that this relationship is negatively moderated by the political-economic clout of fossil fuel industries. I further hypothesise that this negative moderation effect, which captures the influence of fossil fuel industries on environmental and climate policy, is stronger when the dependent variable is conceptualised and measured in terms of instruments of targeted coercion than of remote coercion.

A test of the above hypotheses requires a linear model with country and year fixed effects, where the central explanatory variable is the interaction term between my measure of programmatic environmental salience in government, operationalised as Per501, and the political-economic clout of fossil fuel industries, operationalised as natural resource rents. It also requires two different sets of models, each using a different measure of the dependent variable, capturing different levels of state coercion. Due to the time-series nature of the data, as well as the theoretical expectation of a temporal delay between causal variables and their hypothesised outcome, measures of salience, fossil fuel rents, and fossil fuel reliance

are all lagged by one year. Table 5.1 consists of a summary of models *1a, 1b, 1c,* and *1d,* which have as their dependent variable a measure of environmentally-related taxes, while table 5.2 summarises models *2a, 2b, 2c,* and *2d,* where the dependent variable is measured in environmentally-related subsidies.

Where the dependent variable is measured using environmental taxes as a share of GDP to capture targeted coercive instruments, results go counter to expectations.[28] The interaction term between measures of programmatic environmental salience and fossil fuel rents is not found to be significant, precluding a rejection of the central null hypothesis. Moreover, the results in table 5.1 provide no evidence of environmental program-to-policy linkage where environmental policy is defined in terms of taxation. While there is insufficient evidence to dismiss null hypotheses H_{3a} and H_{3b}, natural resource rents are found to consistently have a significant and direct effect on environmentally-related taxes, indicating that the political-economic clout of fossil fuel industries may indeed have a negative effect on environmental regulation, albeit not in the manner hypothesised above. As shown in table 5.1, a 1% increase in natural resource rents as share of GDP produces a decrease in environmentally-related taxes between a 5.1 and 6.2%.

Where the dependent variable is measured using environmental subsidies to capture remote coercive instruments, however, the data exhibit an altogether different pattern. Firstly, Programmatic environmental salience has a robustly significant effect on environmental subsidies following the addition of control variables, providing evidence of a programme-to-policy linkage where environmental policy is defined narrowly in distributive terms. A 1% increase in governments' programmatic environmental salience is found to produce at least a 22.1% increase in environmental subsidies.

Most importantly, however, the interaction term between programmatic environmental salience and natural resource rents is found to be significant in the manner hypothesised, providing evidence of fossil fuel industries acting as moderators of environmental PPL within the bounds of distributive policy, and allowing a partial and cautious dismissal of null hypotheses H_{3a} and H_{3b}.

[28] Also noteworthy, though not directly related to the hypothesis being tested, is the negative and significant effect of polity score on the dependent variable across all model specifications, which, although driven by a small subset of observations, indicates that the relationship between democracy and environmental policy is not as straightforward as one might expect. This is especially relevant as program-to-policy linkage is an inherently democratic concept.

	Dependent variable:			
	Environmentally-Related Taxes			
	1a	1b	1c	1d
Programmatic Environmental Salience w.m. $_{(t-1)}$	0.006	-0.001	0.008	0.007
	(0.005)	(0.005)	(0.007)	(0.008)
Natural Resource Rents $_{(t-1)}$	-0.051***	-0.062***	-0.063***	-0.066***
	(0.016)	(0.015)	(0.015)	(0.020)
Programmatic Environmental Salience p.m. $_{(t-1)}$			-0.015**	-0.015**
			(0.007)	(0.007)
Fossil Fuel Reliance $_{(t-1)}$		0.007*	0.008*	0.008*
		(0.004)	(0.004)	(0.004)
Left-Right Lean w.m.		-0.093***	-0.092***	-0.092***
		(0.025)	(0.025)	(0.025)
GDP Growth $_{(t-1)}$		-0.006	-0.005	-0.005
		(0.006)	(0.006)	(0.006)
Polity Score		-0.042**	-0.044**	-0.044**
		(0.020)	(0.020)	(0.020)
EU Membership		0.105	0.136	0.137
		(0.113)	(0.114)	(0.114)
Programmatic Environmental Salience $_{(t-1)}$ *x Natural Resource Rents t-1)*				0.001
				(0.002)
Observations	578	536	536	536
R^2	0.022	0.083	0.093	0.093
Adjusted R^2	-0.073	-0.020	-0.011	-0.013
F Statistic	5.798***	6.241***	6.145***	5.458***
	(df = 2; 526)	(df = 7; 481)	(df = 8; 480)	(df = 9; 479)
Note:				*p<0.1;* ***p<0.05;*** p<0.01

Table 5.1: Summary results of linear fixed-effect models *1a*, *1b*, *1c*, and *1d*

	Dependent variable:			
	Environmentally-Related Subsidies			
	2a	2b	2c	2d
Programmatic Environmental Salience w.m. $_{(t-1)}$	10.942	22.141**	70.686***	90.909***
	(11.143)	(11.065)	(17.710)	(18.683)
Natural Resource Rents $_{(t-1)}$	-59.504**	-79.763***	-81.252***	-19.891
	(23.999)	(24.778)	(23.843)	(31.788)
Programmatic Environmental Salience p.m. $_{(t-1)}$			-46.902***	-44.796***
			(13.674)	(13.349)
Fossil Fuel Reliance $_{(t-1)}$		50.378***	56.182***	58.457***
		(11.833)	(11.510)	(11.247)
Left-Right Lean		47.046	19.774	15.507
		(79.462)	(76.863)	(74.931)
GDP Growth $_{(t-1)}$		-22.088	-22.338	-31.402*
		(18.949)	(18.231)	(18.055)
Polity Score		-123.462	-167.903**	-198.372***
		(75.423)	(73.713)	(72.648)
EU membership		414.009**	436.674***	435.259***
		(158.993)	(153.110)	(149.232)
Programmatic Environmental Salience $_{(t-1)}$ *x Natural Resource Rents (t-1)*				-11.812***
				(4.175)
Observations	181	179	179	179
R^2	0.045	0.186	0.253	0.295
Adjusted R^2	-0.228	-0.081	-0.0004	0.050
F Statistic	3.319** (df = 2; 140)	4.385*** (df = 7; 134)	5.616*** (df = 8; 133)	6.144*** (df = 9; 132)
Note:				*p<0.1;* ***p<0.05;*** p<0.01

Table 5.2: Summary results of linear fixed-effect models *2a*, *2b*, *2c*, and *2d*

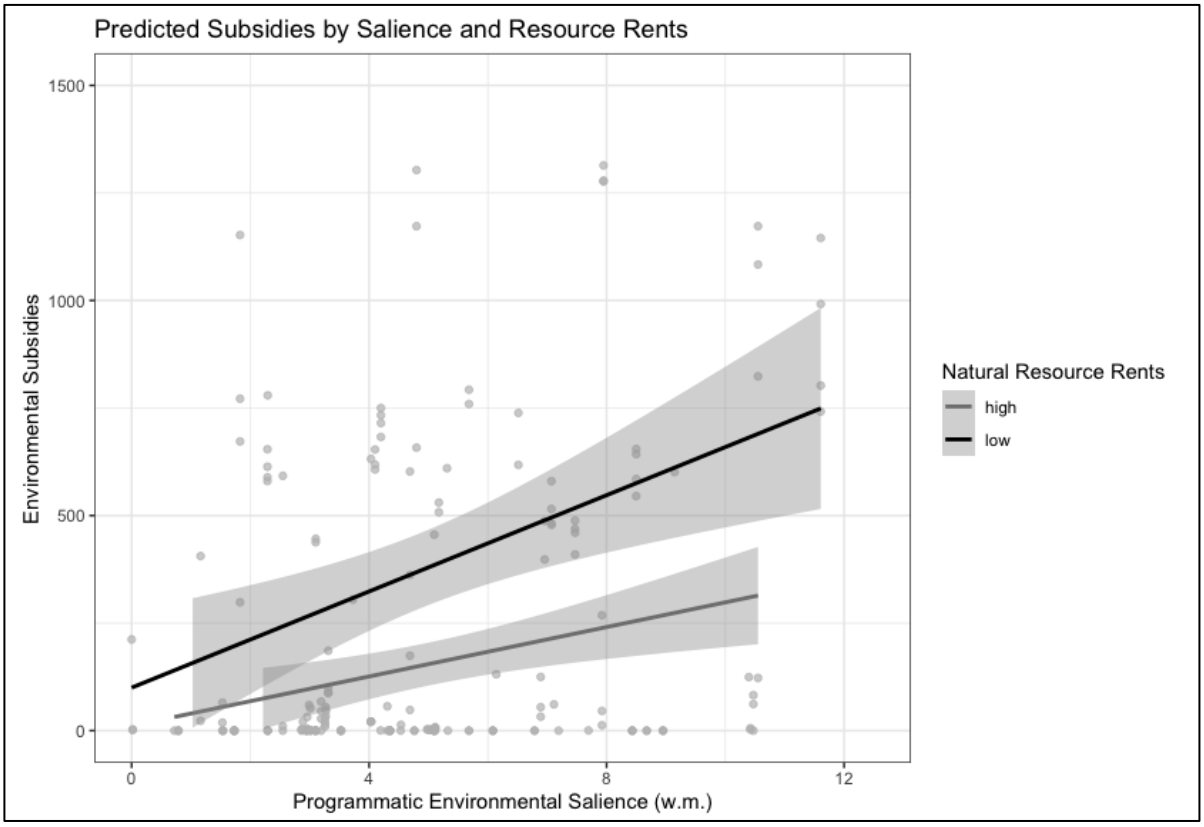

Fig. 5.4: Moderating Effect of Natural Resource Rents on the Relationship between Programmatic Environmental Salience and Environmental Subsidies

Figure 5.4 illustrates the above-described interaction effect by ways of a median split of natural resource rents. While these results must be approached with caution given the limitations of the data on environmental subsidies (especially in terms of sample size), evidence of the hypothesised moderating effect of natural resource rents on the relationship between environmental salience in manifestos and distributive environmental policy is relatively strong.

Interpreting Mixed Evidence: Policies and Politics

These results point to the influence of fossil fuel industries on both types of environmental policy. Where an environmental program-to-policy linkage exists, as is the case with distributive policy, the political-economic clout of fossil fuel industries weakens the relationship between programs and policy. Where such a linkage does not exist, as is the case with regulatory environmental and climate policy, the effect of the political-economic clout of fossil fuel industries can be observed directly on the dependent variable.

These findings also reveal a strong element of conditionality in environmental and climate program-to-policy linkage, and although null hypothesis H_{3c} cannot be dismissed, the fundamental premise that PPL is not homogenous across policy types is far from wrong.

While a relatively strong relationship is observed between programmatic environmental salience and the implementation of distributive environmental policy, the same cannot be said of a relationship between programmatic environmental salience and regulatory environmental policy. This contrast reveals that the political dynamics underpinning the implementation of environmental and climate policies differ substantially depending on the type of policy in question. Specifically, it indicates that in the environment and climate policy area, the political barriers posed by fossil fuel influence to the implementation of policy instruments of remote coercion may be lower than the barriers to the that of policy instruments of targeted coercion.

These findings reinforce arguments related to the heterogenous incentives for stakeholder engagement and their consequences for political activity, for the likelihood of policy implementation, and for the path along which the policy landscape develops in a given area.

In models that take as their dependent variable a measure of environmental and climate policy with targeted coercive means (i.e., environmentally-related taxes), no linkage is observed between environmental and climate programs and policies, while the relationship between fossil fuel rents and the dependent variable is robustly negative. This corroborates the idea that the prospect of targeted coercion (i.e., policy choices for which they will have to pay), presents fossil fuel industries with an incentive to mobilise by leveraging their political-economic clout in an arena as close as possible to the policymaking nexus, enabling more effective influence over information exchanges and decision-making processes. Models *1a*, *1b*, *1c*, and *1d* reinforce the underlying argument of H_3, albeit not in the manner expected. They provide evidence that fossil fuel interests, as a result of their organisational advantages and of their strategic positioning relative to the state, may be strong enough to influence the policymaking process and prevent governments from following through on their programs with targeted coercive environmental and climate policies.

In models that take as their dependent variable a measure of environmental and climate policy with remote coercive means, however (i.e., environmental subsidies), a linkage is observed between environmental and climate programs and policies, along with the negative moderating effect created by the clout of fossil fuel industries as measured in terms of natural resource rents. This reinforces the idea that while the broader goal of a green transition away from fossil fuels presents the petrochemical sector with a quasi-existential threat that acts as a powerful motivator of mobilisation, the threat is not perceived as acutely when the policies being proposed entail remote coercion (i.e., costs that are displaced onto the taxpayer).

Therefore, while fossil fuel industries leverage their political-economic clout in a manner that reduces governments' ability to fully follow through on the programs with remote coercive environmental and climate policies, the don't inhibit it altogether. This allows other interests to shape the process, including political parties in government seeking to fulfil their own agendas, as well as interest groups representing actors with a vested interest in creating and preserving subsidy schemes.

Perhaps more importantly, these findings corroborate one of Lowi's (1972) key contributions to the policy analysis literature: that policy choices represent conscious decisions my governments and policymakers and are not merely incidental to the political process.

Distributive policy strategies appeal to governments that are embarking on a change in policy direction or venturing into an issue area characterised by controversy and socio-economic conflict, as is the case with environment and climate policy. Policy strategies based on instruments of remote coercion, such as subsidy schemes, diffuse the sanctioning element by displacing it onto the public budget and reduce the likelihood of political conflict with powerful vested interests. This choice allows governments to retain their commitment to the overarching environmental or climate policy goal without antagonising incumbent fossil fuel industries, but entails trade-offs that may not initially be apparent. The first is that policies of targeted coercion such as regulatory instruments provide more easily identifiable results and are less susceptible to misuse. Moreover, the separation that distributive instruments entail between costs and benefits saddles the taxpaying public with the cost burden of environmental and climate sustainability and of a much-needed green transition. This also creates a network of entitlements that are extremely hard to dismantle even when they outgrow their effectiveness or usefulness, paving the way for misuse and patronage. In this regard, another reason why the linkage between environment and climate programs and policy is so apparent in models *2a*, *2b*, *2c*, and *2d* could be that subsidy programs, once established, create a pattern of path-dependence that makes policy reversals highly unlikely.

Conclusions

This chapter explored the theoretical effects of the pattern of influence-seeking behaviour explored in Chapter 2 and analysed in Chapters 3 and 4 by developing and translating ideas about actor behaviour into ones about influence on the policies and outcomes. This evolution of the central theoretical framework was underpinned by the question of whether political-

economic clout enables fossil fuel industries to negatively influence environmental and climate policymaking and outcomes. In doing so, it grappled with the concept of 'influence' and with the ever-present empirical difficulty associated with measurement in the absence of an empirical counterfactual.

This pursuit of a deeper understanding of influence was informed by findings from the literature on energy transitions, which point to opposition from the fossil fuel sector as a key factor in slowing down policy shifts aimed at greater sustainability without capturing 'influence' in the political sense of the word. It was also informed by findings from the lobbying literature which find evidence of influence-seeking behaviour by the fossil fuel industry without fully capturing its effects.

The approach taken in this chapter was one that treated fossil fuel influence on environmental and climate policy as a product of actors that utilise their political-economic clout to influence policymakers whose goals are a product of the party system and electoral process. In this regard, the course of action that policymakers would take in the absence of outside influence, which is most systematically captured in party manifestos, constitutes the counterfactual against which influence can be measured. The salience approach constitutes the basis of this analysis as it enables the measurement of this 'program-to-policy linkage' or PPL across countries and over time, allowing me to draw generalisable conclusions about patterns of influence.

While environmental and climate issues have permeated party systems and left their mark in the form of the increased salience of this topic in electoral manifestos, political commitment and follow-through are often found to be lacking, and governments often fall short of expectations on environment and climate promises. The literature on PPL and pledge fulfilment provides various insights as to factors that affect the degree to which governments fulfil their promises, which include institutional factors such as presidentialism vs. parliamentarism, coalition vs. single-party government, the contents of government agreements, and the allocation of ministerial portfolios. The influence of special interests on program-to-policy linkage, however, does not feature in this literature, resulting in a gap that this chapter aimed to fill.

The theoretical framework developed in Chapter 2, which straddled insights from the collective action and policy analysis literatures, was used to fill this gap. To this end, this

chapter tested three hypotheses: that programmatic environmental salience has a positive effect on the implementation of environmental policy, that this relationship is negatively moderated by the political-economic clout of fossil fuel industries, and that this negative moderation effect, which captures the influence of fossil fuel industries on environmental and climate policy, is stronger when the dependent variable is conceptualised and measured in terms of instruments of targeted coercion than of remote coercion.

My objective in this chapter was to obtain generalizable conclusions as to the extent and instrument-dependent pattern of fossil fuel industry influence on environment and climate policy. My approach involved analysing variation in environmental and climate policy in OECD countries for the period 1994 - 2016, evaluating the impact of programmatic salience on environmental and climate policy, of the moderating effect of fossil fuel industries on this relationship, and of policy type as a factor that determines the strength of this moderating effect. The purpose of the exercise was to develop the theory of patterns of participation into one of patterns of influence.

6

Concluding Remarks

The impetus for this research project stems directly from the ever-increasing urgency of environmental and climate issues as testified by the increased incidence of phenomena such as rising temperatures and sea levels and extreme weather events. This urgency is reinforced by an abundance of scientific evidence detailing not only the anthropogenic nature of these issues, but also their potentially devastating consequences in the absence of adequate action (IPCC 2022). In this context, adequate action refers to government action in the form of coherent and long-sighted environmental and climate policies that target the negative environmental externalities of a currently unsustainable model of economic growth (IPCC 2022).

At the crux of many of these issues lies the petrochemical sector, which coexists uncomfortably with pervasive evidence that a transition away from fossil fuels and towards clean and sustainable sources of energy is imperative to the resolution of most environmental and climate-related issues. It goes without saying that the combustion of fossil fuels releases greenhouse gases into the atmosphere, but the harmful effects of these fuels on the environment are by no means limited to their connection to climate change. The extraction of hydrocarbons reduces water and soil quality in surrounding areas, causing ecological and geological damage and posing a threat to both marine and terrestrial wildlife. Fuel transportation comes with risks of oil spills and gas leaks, while carbon emissions are also connected to rainwater acidity, water pollution, and the proliferation of respiratory problems and illnesses (Union of Concerned Scientists 2016).

The increased urgency of warnings from the scientific community underscores the apparent disconnect between the gravity of this group of issues and the relatively slow implementation of effective policy responses by governments. This, in turn, draws attention to the emergence of a policy conflict, especially over climate issues, where policy advancements towards energy transitions and greater sustainability have faced strong opposition from a number of actors from cultural, political and economic spheres. The attribution of this conflict to an information deficit between experts and policymakers, or between scientists and publics, does not suffice, as climate-related attitudes, beliefs and behaviours have been demonstrated over the course of past decades to not be shaped by knowledge alone – were that the case, environmental and climate policies would have advanced at a faster rate (Suldovsky 2017).

It appears instead that the lag in environmental and climate policy is inexorably tied to active and systematic resistance and lobbying by vested interests, foremost among them those from the fossil fuel sector, to which a zero-carbon transition entails the threat of obsolescence, and to which the continuation of the status quo entails continued economic and political gain (Brulle 2020). Literature on the fossil fuel lobby echoes that on energy transitions, where carbon lock-in is found to perpetuate the dominance of fossil fuel energy incumbents, whose strength in turn delays transitions to green sources of energy (Unruh 2000; Aklin and Urpelainen 2013; Hess 2013) increasingly as a result of business engagement with political and policymaking processes (Falkner 2008). While studies from the energy transition literature are generally successful in identifying the effects of fossil fuel industries on green transitions, they fall short of identifying 'influence' in its true conceptual and political sense, where the presence of an influencer makes the actions of the influenced different than they would have otherwise been in a counterfactual universe (Dahl 1957, Lukes 1974, Lowery 2013. Literature on the fossil fuel lobby, on the other hand, which proposes compelling evidence of lobbying influence, including that of markedly higher spending on climate issue lobbying by fossil fuel-related actors relative to environmental and other actors (Brulle 2018), tends to neglect other channels through which this sector may attempt to influence policy. While the literature on lobbying is well-established, the patterns of participation of fossil fuel actors in other institutions of state-society relations, such as public consultations, are comparatively understudied.

Leveraging these theoretical and empirical gaps as opportunities, this dissertation has presented a theoretical framework designed to address the twin questions of whether fossil fuel industries exhibit influence-seeking patterns of participation in public consultations, and whether the same actor- and policy-level factors that shape this hypothesised influence-seeking pattern of participation also translate into a specific pattern of influence. Insights from the collective action and policy analysis literatures are harnessed to hypothesise that actors from the fossil fuel industry are more likely to respond to environment- and climate-related public consultations than actors representing diffuse interests, and that fossil fuel industry groups are even more likely to dominate the process than individual firms. It is further argued that actors from the fossil fuel industry are more likely to respond to environment- and climate-related consultations when the policies being proposed entail targeted coercive mechanisms than when they entail remote coercive mechanisms that displace costs onto public budgets. Finally, it is argued that as the political-economic clout of fossil fuel industries increases, so does their negative influence on environmental and

climate policy, with the caveat that this relationship should be stronger when looking at policies entailing targeted coercive mechanisms than for ones entailing remote coercive mechanisms that displace the burden of a green transition onto the public budget.

In order to assess whether fossil fuel actors engage in systematic patterns of influence-seeking participation in environment- and climate-related public consultations, I select two country-cases for further study based on data on the economic power of fossil fuel industries and on environmental and climate policy across the OECD. The UK is selected as a 'typical' case that exemplifies central tendencies on these variables, with the objective of identifying a 'typical' pattern of influence-seeking participation by fossil fuel industries and their associated industry groups. Denmark is selected as a 'deviant' case that exemplifies unusually high values on measures of regulatory environmental and climate policy. The objective of the latter case study is exploratory, aiming to understand how rates of fossil fuel actor participation in such consultations may be connected to the implementation of extensive environmental and climate policy in the Danish context.

These case studies fail to provide 'smoking gun' evidence of the hypothesised patterns of influence-seeking behaviour by British and Danish fossil fuel industries in public consultations on environmental and climate policy, but nevertheless corroborate the relevance of the overall investigative direction while also underscoring the important role of context-specific factors in shaping participatory and potential influence-seeking dynamics.

In the UK case, it is found that British fossil fuel industries are indeed highly embedded in public consultations, undercutting descriptions of fossil fuel influence as being purely covert. This constitutes an important finding in its own right. While insufficient evidence is found in this context of the disproportionate dominance of fossil fuel actors relative to other actor types, robust evidence is found of the important role played by individual fossil fuel companies in environmental and climate-related public consultations. This, I argue, is reinforced by the pluralist characteristics of the British stakeholder ecosystem, which, while preventing the dominance of fossil fuel industry groups, may have deepened the imbalance of power between this industry and the state, stemming from the privatisation and liberalisation of the oil sector between 1977 and 1987. Party dynamics are also considered likely to play an important role in this regard, as inter-party conflict dynamics, exacerbated by the British majoritarian system and characterised by salient ideological divisions over the legitimate extent of state intervention, have failed to provide signals of policy commitment

and consensus in the UK context, empowering large corporations such as Shell and BP to rely on their firm-level resources in pursuit of influence.

In the Danish case, no evidence is found of fossil fuel industry embeddedness in the public consultation process in the field of environment and climate, prompting the question of why such actors fail to avail of the influence-seeking opportunities afforded by this process, and of whether this is linked to levels of environmental and climate regulation in the Danish context. Following an overview of potential explanations for this lack of embeddedness, it is argued that strong signals of policy commitment cause fossil fuel actors to perceive the potential for influence as reduced, the public consultation process as less valuable, and participation as less worthwhile. In my interpretation of these results, I argue that contextual factors are once again likely to play a central role. Intra-party competition in the Danish context is underpinned by consensus on key elements of environmental and climate policy and is characterised by competition over issue ownership. Moreover, state ownership of key assets in the Danish fossil fuel landscape allows the state to retain a considerable level of control over the direction in which the industry develops while also heightening communication and informational awareness between the state and industry, affording each side greater clarity about the position and level of commitment of the other and reducing the potential for industry to bias informational exchanges and policymaking processes.

There are of course limits to what can be extrapolated from these findings. One might argue that while avenues of influence needn't be mutually exclusive, there is always a possibility that influence is ultimately exerted in fora to which the public has no access. This does not negate the role of institutions and transparency, but if arrangements or agreements do take place behind closed doors, the extent to which I am able to account for them in this study is severely limited. The external generalisability of these case studies, meanwhile, is limited by the inherent need, due to a lack of availability of cross-national data on consultations, to make a judgement call in terms of case selection. While I present the UK as a 'typical' case, I refrain from making broad claims regarding the generalisability of these UK-specific conclusions across the OECD, and the rationale of the 'deviant' case, on the other hand, is an exploratory one used to suggest avenues of theoretical refinement. In this regard, an extension of this project could provide an analysis of a broader range of countries and a larger sample of individual consultations in order to trace policies from their inception, through consultation, to implementation. This would also mitigate issues experienced in these analyses related to unexplained missingness and inconsistencies in consultation reporting.

Notwithstanding these limitations, these case studies, and the comparison between the two, point to a several important theoretical implications. While generalisable trends related to actor-type advantages and policy-level incentives are not to be excluded, the relevance of contextual factors shouldn't be understated. Firstly, far from constituting an outdated theoretical framework, the distinction between systems with pluralist traits and ones with corporatist characteristics is highly relevant insofar as it has the potential to shape the contours of the stakeholder ecosystem. Secondly, the party system dynamics that shape the ways in which parties position themselves relative to environmental and climate issues provide important signals of policy commitment (or lack thereof) that helps determine the extent to which public consultations used by fossil fuel industries in pursuit of influence. It appears likely that polarised majoritarian systems and fundamental ideological differences weaken such signals of policy commitment.

Most importantly, perhaps, the extent to which the fossil fuel sector is privatised and liberalised is likely to play a central role in shaping the balance of power between the state and industry, and, consequently, the degree to which the former can control the direction in which the latter progresses. State ownership of key players in the national petrochemical landscape not only affords the state greater control over the sector, but also prevents the capture of informational exchanges (along with the consequent bias of the policymaking process) by reducing knowledge asymmetries and strengthening signals of policy commitment by intensifying communication between the state and industry. These factors are all worthy of further study, but investigations of the role of state ownership are likely to be especially fruitful given the role that states have historically (and still do) play in the development and power of the petrochemical sector.

State ownership could indeed be included in an extension of the large-$_n$ analysis presented in this dissertation of environmental and climate policy in OECD countries between 1994 and 2016, which aims to identify a pattern of fossil fuel industry influence on environmental and climate policy by using salience theory and programme-to-policy linkage as an empirical foundation. The results of this analysis indicate that a relationship does exist between the salience of environment and climate issues in party manifestos and subsequent distributive policy implementation (which entails remote coercive mechanisms), and that this relationship is indeed negatively moderated by the political-economic clout of the fossil fuel industry. No such relationship is observed, however, between the salience of environment and climate issues in party manifestos and subsequent regulatory policy implementation (which entails targeted coercive mechanisms), and it is found instead that the political-

economic clout of fossil fuel industries has a direct, negative, and robustly significant effect on the dependent variable. While these results deviate from formal expectations, they lend credence to the original policy-related argument that policy means (rather than policy goals) are key to policy analysis, and that the implementation of environmental and climate policies differs substantially depending on the type of policy in question.

It is worth reiterating that this analysis, too, is not without its limitations, foremost among which is the dramatic reshaping of global, and especially European, energy politics following Russia's unlawful invasion of Ukraine in 2022, and the consequent effects on environmental policy. With this conflict making energy security a paramount concern, it appears that several governments have de-prioritised the green transition, with some even turning to coal to ensure adequate immediate supply. While renewable energies are key to energy security in the long term, they do not offer a solution in the short term. Because my analysis takes place prior to February 2022, I do not make or test any claims regarding the effects of this conflict and the claims made herein may not be generalisable beyond this date.

My use of the salience approach, too, though crucial and expeditious to my research objectives, represents a substantial trade-off. A pledge-based approach might have painted a more precise empirical picture of environment- and climate-related program-to-policy linkage, and the salience approach flounders somewhat when trying to explain political systems that aren't strictly majoritarian. My choice of the salience approach, however, allows me to analyse my research question from a large-$_n$ perspective, in more than one or, at most, a handful of countries. There is ample room in future research for the deployment of a pledge-based approach that, though narrower in scope, may afford more granular insight on the relationship between environmental and climate policy type and fossil fuel influence. Likewise, future research should engage in further exploration of the patterns of behaviour exhibited by all the other sectors that rely heavily on the petrochemical industry, especially utilities, transport and heavy industry. Taking these sectors more fully into account may help paint a clearer and more accurate picture of the carbon lock-in and of the extent of business influence that may be slowing down energy transitions and decarbonisation.

Notwithstanding these limitations, these findings underscore the importance of heterogenous incentives for stakeholder engagement, and have significant implications for political activity, for the probability that a given policy will be implemented, and for the overall evolution of the environmental and climate policy landscape.

Notwithstanding these limitations, these findings underscore the importance of heterogenous incentives for stakeholder engagement, and have significant implications for political activity, for the probability that a given policy will be implemented, and for the overall evolution of the environmental and climate policy landscape.

When governments are in the process of initiating a shift towards new policy directions or new policy areas that have a high potential for controversy and conflict between established incumbents benefiting from the status quo and those attempting to enact change (as is the case in environmental and climate policy), the importance of their choice of coercive means is heightened. The incentive for established incumbents to mobilise, and, consequently, the potential for undesirable political conflict, increases when governments propose policies that entail a targeted coercive burden on actors benefiting from the status quo. The organisational advantages from which such actors benefit also make it harder for actors supporting the change in policy direction to hold their own in the stakeholder landscape. It is therefore easier for governments to pursue such changes in policy direction or moves into controversial issue areas by adopting strategies that entail remote coercion, which are less likely to antagonise powerful incumbents. As the incentive for such actors to mobilise is reduced in view of such strategies, which often revolve around distributive measures such as subsidies for renewables and electric vehicles, for instance, other actors within the stakeholder ecosystem, especially groups representing actors that benefit from distributional measures, are empowered to engage more strongly with the state.

While this approach may appear expeditious, it also gives cause for pause and raises a number of concerns, such as the high potential for abuse and misuse of such instruments and the difficulties associated with measurement and evaluation of distributive measures. Such approaches are also likely to give rise to structural inefficiencies as a result of the separation of costs and benefits, which enables the establishment of networks of entitlement, facilitates logrolling, and often makes it extremely hard to dismantle policies even when they are no longer efficient or effective. This has the potential to transform well-intentioned strategies into ones of path-dependent patronage.

Most important, however, from a normative and democratic perspective, is the implication that the political-economic clout of fossil fuel industries, which enables them to influence policy in such a way as to undermine regulatory approaches and facilitate the establishment of extensive subsidy programs, allows them to displace the burden of green transitions onto the taxpaying public.

In this regard, further study of signals of policy commitment, especially as a factor of party systems and state ownership of petrochemical assets, becomes all the more important, as it will enable an improved understanding of the factors thanks to which the influence of fossil fuel industries is not wholly unfettered

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Annex 1:
Robustness Tests – Chapter 3

Re-testing H_{1a} with Percentage Responses
M Public Interest Organisations = 3.62
IQR Public Interest Organisations = 8.24
M Fossil Fuel Industry Responses = 3.84
IQR Fossil Fuel Industry Responses = 14.9
P = 0.5549 (difference between groups not statistically significant)

Re-testing H_{1a} with Logged Responses
M Public Interest Organisations = .301
IQR Public Interest Organisations = .699
M Fossil Fuel Industry Responses = .602
IQR Fossil Fuel Industry Responses = .77
P = 0.083 (difference between groups not statistically significant)

Re-testing H_{1a} with Disaggregated Fossil Fuel Actor Types (Raw Number of Responses)
M Public Interest Organisations = 1
IQR Public Interest Organisations = 4
M Fossil Fuel Industry Group Responses = .5
IQR Fossil Fuel Industry Group Responses = 1
P = 0.00175 (difference between groups is statistically significant)
Effect Size r = .265

M Public Interest Organisations = 1
IQR Public Interest Organisations = 4
M Fossil Fuel Company Responses = 2
IQR Fossil Fuel Company Responses = 5
P = .418 (difference between groups not statistically significant)

Re-testing H_{1a} with Disaggregated Fossil Fuel Actor Types (Percentage Responses)
M Public Interest Organisations = 3.62
IQR Public Interest Organisations = 8.24
M Fossil Fuel Industry Group Responses = .055
IQR Fossil Fuel Industry Group Responses = 3.54
P = < 0.0001 (difference between groups is statistically significant)
Effect Size r = .422

M Public Interest Organisations = 3.62
IQR Public Interest Organisations = 8.24
M Fossil Fuel Company Responses = 2.91
IQR Fossil Fuel Company Responses = 9.56
P = 0.625 (difference between groups not statistically significant)

Re-testing H_{1a} with Disaggregated Fossil Fuel Actor Types (Logged Responses)
M Public Interest Organisations = .301
IQR Public Interest Organisations = .699
M Fossil Fuel Industry Group Responses = .151
IQR Fossil Fuel Industry Group Responses = .301
P = 0.002 (difference between groups is statistically significant)

Effect Size r = .265

M Public Interest Organisations = .301
IQR Public Interest Organisations = .699
M Fossil Fuel Company Responses = .477
IQR Fossil Fuel Company Responses = .778
P = 0.418 (difference between groups not statistically significant)

Re-testing H_{1b} with Percentage Responses
M Fossil Fuel Industry Group Responses = .055
IQR Fossil Fuel Industry Group Responses = 3.54
M Fossil Fuel Company Responses = 2.91
IQR Fossil Fuel Company Responses = 9.56
P = .0004178 (difference between groups is statistically significant)
Effect Size r = .298

Re-testing H_{1b} with Logged Responses
M Fossil Fuel Industry Group Responses = .151
IQR Fossil Fuel Industry Group Responses = .301
M Fossil Fuel Company Responses = .477
IQR Fossil Fuel Company Responses = .778
P = < .0001 (difference between groups is statistically significant)
Effect Size r = .388

Re-testing H_2 with 'Regulatory vs. Non-Regulatory' Classification (Raw Number of Responses)
M Non-Regulatory = 3.5
IQR Non-Regulatory = 5.75
M Regulatory = 2.5
IQR Regulatory = 4
P = .965 (difference between groups not statistically significant)

Re-testing H_2 with 'Regulatory vs. Non-Regulatory' Classification (Percentage Responses)
M Non-Regulatory = 4.70
IQR Non-Regulatory = 16.4
M Regulatory = 3.67
IQR Regulatory = 11.2
P = .7761 (difference between groups not statistically significant)

Re-testing H_2 with 'Regulatory vs. Non-Regulatory' Classification (Logged Responses)
M Non-Regulatory = .651
IQR Non-Regulatory = .77
M Regulatory = .54
IQR Regulatory = .524
P = .7482 (difference between groups not statistically significant)

Re-testing H_2 with Disaggregated Fossil Fuel Actor Types (Industry Group Responses, Raw Number)

M Remote Coercion = 1
IQR Remote Coercion = 1

M Targeted Coercion = 0
IQR Targeted Coercion = 1
P = .2333 (difference between groups not statistically significant)

Re-testing H_2 with Disaggregated Fossil Fuel Actor Types (Company Responses, Raw Number)
M Remote Coercion = 2.5
IQR Remote Coercion = 5
M Targeted Coercion = 1
IQR Targeted Coercion = 3.5
P = .779 (difference between groups not statistically significant)

Annex 2:
Robustness Tests – Chapter 4

Re-testing H_{1a} with Disaggregated Fossil Fuel Actor Types (Percentage Response Rate)
M Public Interest Organisations = 13.3
IQR Public Interest Organisations = 25
M Fossil Fuel Industry Group Responses = 0
IQR Fossil Fuel Industry Group Responses = 0
P = < .0001(difference between groups is statistically significant)
Effect Size r = .354

M Public Interest Organisations = 13.3
IQR Public Interest Organisations = 25
M Fossil Fuel Company Responses = 0
IQR Fossil Fuel Company Responses = 0
P = < .0001(difference between groups is statistically significant)
Effect Size r = .457

Re-testing H_{1a} with Disaggregated Fossil Fuel Actor Types (Logged Rates)
M Public Interest Organisations = 1.16
IQR Public Interest Organisations = 1.42
M Fossil Fuel Industry Group Responses = 0
IQR Fossil Fuel Industry Group Responses = 0
P = < .0001 (difference between groups is statistically significant)
Effect Size r = .354

M Public Interest Organisations = 1.16
IQR Public Interest Organisations = 1.42
M Fossil Fuel Company Responses = 0
IQR Fossil Fuel Company Responses = 0
P = < .0001 (difference between groups is statistically significant)
Effect Size r = .457

Re-testing H_{1b} with Logged Responses
M Fossil Fuel Industry Group Responses = 0
IQR Fossil Fuel Industry Group Responses = 0
M Fossil Fuel Company Responses = 0
IQR Fossil Fuel Company Responses = 0
P = < .2449(difference between groups is not statistically significant)

Re-testing H_2 with 'Regulatory vs. Non-Regulatory' Classification (Percentage Response Rate)
M Non-Regulatory = 0
IQR Non-Regulatory = 0
M Regulatory = 0
IQR Regulatory = 0
P = .401 (difference between groups not statistically significant)

Re-testing H_2 with Disaggregated Fossil Fuel Actor Types (Industry Group Response Rate)
M Remote Coercion = 0

IQR Remote Coercion = 0
M Targeted Coercion = 0
IQR Targeted Coercion = 0
P = .4579 (difference between groups not statistically significant)

Re-testing H_2 with Disaggregated Fossil Fuel Actor Types (Company Response Rate)
M Remote Coercion = 0
IQR Remote Coercion = 0
M Targeted Coercion = 0
IQR Targeted Coercion = 0
P = .8504 (difference between groups not statistically significant)

Annex 3:
Robustness Tests - Chapter 5

Models 1a, 1b, 1c, and 1d

Using Per Capita Income (World Bank Data) to Measure Macroeconomic Performance

	Dependent variable:			
	Environmentally-Related Taxes			
	1a	1b	1c	1d
Programmatic Environmental Salience w.m. $_{(t-1)}$	0.006	-0.001	0.008	0.006
	(0.005)	(0.005)	(0.006)	(0.007)
Natural Resource Rents $_{(t-1)}$	-0.051***	-0.034**	-0.034**	-0.043**
	(0.016)	(0.014)	(0.014)	(0.019)
Programmatic Environmental Salience p.m. $_{(t-1)}$			-0.015**	-0.014**
			(0.006)	(0.006)
Fossil Fuel Reliance $_{(t-1)}$		0.011***	0.011***	0.011***
		(0.004)	(0.004)	(0.004)
Left-Right Lean w.m.		-0.094***	-0.094***	-0.093***
		(0.024)	(0.023)	(0.024)
Per Capita Income $_{(t-1)}$		-0.00001***	-0.00001***	-0.00001***
		(0.00000)	(0.00000)	(0.00000)
Polity Score		-0.030	-0.032*	-0.032*
		(0.019)	(0.019)	(0.019)
EU Membership		-0.009	0.023	0.026
		(0.107)	(0.108)	(0.108)
Programmatic Environmental Salience $_{(t-1)}$ *x Natural Resource Rents t-1)*				0.001
				(0.002)
Observations	578	536	536	536
R^2	0.022	0.188	0.197	0.198
Adjusted R^2	-0.073	-0.096	-0.105	-0.104
F Statistic	5.798***	15.875***	14.726***	13.119***
	(df = 2; 526)	(df = 7; 481)	(df = 8; 480)	(df = 9; 479)
Note:				*p<0.1;* ***p<0.05;*** p<0.01

Table A3.1: Models *1a, 1b, 1c,* and *1d* Using Per Capita Income (World Bank Data) to Measure Macroeconomic Performance

Using Unemployment (World Bank Data) to Measure Macroeconomic Performance

	Dependent variable:			
	Environmentally-Related Taxes			
	1a	1b	1c	1d
Programmatic Environmental Salience w.m. $_{(t-1)}$	0.006	-0.001	0.004	0.002
	(0.005)	(0.005)	(0.007)	(0.008)
Natural Resource Rents $_{(t-1)}$	-0.051***	-0.060***	-0.060***	-0.065***
	(0.016)	(0.014)	(0.014)	(0.020)
Programmatic Environmental Salience p.m. $_{(t-1)}$			-0.008	-0.008
			(0.007)	(0.007)
Fossil Fuel Reliance $_{(t-1)}$		0.009**	0.009**	0.009**
		(0.004)	(0.004)	(0.004)
Left-Right Lean w.m.		-0.084***	-0.084***	-0.083***
		(0.025)	(0.025)	(0.025)
Unemployment $_{(t-1)}$		0.030***	0.029***	0.029***
		(0.005)	(0.006)	(0.006)
Polity Score		-0.038*	-0.039**	-0.039**
		(0.020)	(0.020)	(0.020)
EU Membership		0.166	0.184	0.186
		(0.119)	(0.119)	(0.120)
Programmatic Environmental Salience $_{(t-1)}$ *x Natural Resource Rents t-1)*				0.001
				(0.002)
Observations	578	522	522	522
R^2	0.022	0.143	0.145	0.146
Adjusted R^2	-0.073	0.045	0.047	0.045
F Statistic	5.798***	11.111***	9.928***	8.826***
	(df = 2; 526)	(df = 7; 468)	(df = 8; 467)	(df = 9; 466)
Note:				*p<0.1;* ***p<0.05;*** p<0.01

Table A3.2: Models *1a, 1b, 1c,* and *1d* Using Unemployment (World Bank Data) to Measure Macroeconomic Performance

Using Logged Measure of Natural Resource Rents

	Dependent variable:			
	Environmentally-Related Taxes			
	1a	1b	1c	1d
Programmatic Environmental Salience w.m. $_{(t-1)}$	0.005	-0.002	0.008	0.011
	(0.006)	(0.005)	(0.007)	(0.009)
Natural Resource Rents $_{(log)}$	-0.136	-0.227***	-0.234***	-0.206**
	(0.086)	(0.083)	(0.082)	(0.094)
Programmatic Environmental Salience p.m. $_{(t-1)}$			-0.015**	-0.016**
			(0.007)	(0.007)
Fossil Fuel Reliance $_{(t-1)}$		0.006	0.006	0.006
		(0.004)	(0.004)	(0.004)
Left-Right Lean w.m.		-0.091***	-0.090***	-0.091***
		(0.026)	(0.026)	(0.026)
GDP Growth $_{(t-1)}$		-0.006	-0.005	-0.005
		(0.00000)	(0.006)	(0.006)
Polity Score		-0.042**	-0.043*	-0.044**
		(0.020)	(0.020)	(0.020)
EU Membership		0.104	0.136	0.133
		(0.115)	(0.115)	(0.115)
Programmatic Environmental Salience $_{(t-1)}$ *x Natural Resource Rents* $_{(log)}$				0.005
				(0.008)
Observations	578	536	536	536
R^2	0.006	0.063	0.074	0.074
Adjusted R^2	-0.090	-0.042	-0.033	-0.034
F Statistic	1.660***	4.654***	4.768***	4.276***
	(df = 2; 526)	(df = 7; 481)	(df = 8; 480)	(df = 9; 479)
Note:				*p<0.1;* ***p<0.05;*** p<0.01

Table A3.3: Models *1a*, *1b*, *1c*, and *1d* Using logged measure of Natural Resource Rents

This test is of particular importance in light of the positive skew that characterises the variable of natural resource rents. Results are found to be robust even when the log-transformed variable is used.

Models 2a, 2b, 2c, and 2d

Using Per Capita Income (World Bank Data) to Measure Macroeconomic Performance

	Dependent variable:			
	Environmentally-Related Subsidies			
	2a	2b	2c	2d
Programmatic Environmental Salience w.m. $_{(t-1)}$	10.942	10.485**	54.375***	70.420***
	(11.143)	(11.326)	(19.260)	(19.529)
Natural Resource Rents $_{(t-1)}$	-59.504**	-87.206***	-85.292***	-23.353
	(23.999)	(24.480)	(23.896)	(31.488)
Programmatic Environmental Salience p.m. $_{(t-1)}$			-39.508***	-35.415**
			(14.199)	(13.886)
Fossil Fuel Reliance $_{(t-1)}$		44.505***	50.463***	50.921***
		(11.500)	(11.424)	(11.115)
Left-Right Lean		61.571	36.219	37.203
		(77.722)	(76.383)	(74.315)
Per Capita Income $_{(t-1)}$		0.017***	0.012*	0.015**
		(0.007)	(0.007)	(0.007)
Polity Score		-151.642**	-179.447**	-213.130***
		(74.795)	(73.663)	(72.593)
EU membership		520.153***	492.998***	499.972***
		(161.862)	(158.239)	(153.972)
Programmatic Environmental Salience $_{(t-1)}$ *x Natural Resource Rents (t-1)*				-12.049***
				(4.131)
Observations	181	179	179	179
R^2	0.045	0.219	0.262	0.306
Adjusted R^2	-0.228	-0.038	0.012	0.065
F Statistic	3.319** (df = 2; 140)	5.358*** (df = 7; 134)	5.892*** (df = 8; 133)	6.478*** (df = 9; 132)
Note:				*p<0.1;* ***p<0.05;*** p<0.01

Table A3.4: Models *2a, 2b, 2c,* and *2d* Using Per Capita Income (World Bank Data) to Measure Macroeconomic Performance

Using Per Capita Income (World Bank Data) to Measure Macroeconomic Performance

	Dependent variable:			
	Environmentally-Related Subsidies			
	2a	2b	2c	2d
Programmatic Environmental Salience w.m. $_{(t-1)}$	10.942	20.008*	69.878***	87.496***
	(11.143)	(10.980)	(17.714)	(18.548)
Natural Resource Rents $_{(t-1)}$	-59.504**	-71.768***	-69.729***	-12.559
	(23.999)	(26.532)	(25.488)	(33.395)
Programmatic Environmental Salience p.m. $_{(t-1)}$			-48.394***	-46.503***
			(13.787)	(13.521)
Fossil Fuel Reliance $_{(t-1)}$		47.438***	53.012***	54.120***
		(11.746)	(11.392)	(11.166)
Left-Right Lean		53.083	24.647	23.116
		(79.570)	(76.849)	(75.271)
Unemployment $_{(t-1)}$		12.872***	21.384	23.225
		(22.855)	(22.084)	(21.642)
Polity Score		-126.891*	-176.642**	-201.152***
		(76.444)	(74.778)	(74.014)
EU membership		365.657/**	383.657**	366.179**
		(156.202)	(150.105)	(147.175)
Programmatic Environmental Salience $_{(t-1)}$ *x Natural Resource Rents (t-1)*				-10.670**
				(4.140)
Observations	181	179	179	179
R^2	0.045	0.180	0.249	0.285
Adjusted R^2	-0.228	-0.089	-0.005	0.036
F Statistic	3.319** (df = 2; 140)	4.204*** (df = 7; 134)	5.523*** (df = 8; 133)	5.855*** (df = 9; 132)

Note: *p<0.1;* ***p<0.05;*** p<0.01

Table A3.5: Models *2a, 2b, 2c,* and *2d* Using Unemployment (World Bank Data) to Measure Macroeconomic Performance

Using Logged Measure of Natural Resource Rents

	Dependent variable:			
	Environmentally-Related Subsidies			
	2a	2b	2c	2d
Programmatic Environmental Salience w.m. $_{(t-1)}$	7.512	16.647	67.157***	91.563***
	(11.042)	(11.078)	(17.728)	(19.457)
Natural Resource Rents $_{(log)}$	-336.387**	-378.577**	-408.329***	-158.465
	(128.583)	(131.852)	(126.737)	(153.593)
Programmatic Environmental Salience p.m. $_{(t-1)}$			-48.978***	-41.832**
			(13.761)	(13.684)
Fossil Fuel Reliance $_{(t-1)}$		46.451***	52.854***	53.704***
		(11.675)	(11.342)	(11.077)
Left-Right Lean		89.003	61.315	60.284
		(78.944)	(76.114)	(74.311)
GDP Growth $_{(t-1)}$		-20.559	-21.029	-27.155
		(19.061)	(18.283)	(17.988)
Polity Score		-121.147	-164.187**	-206.923***
		(76.631)	(74.485)	(74.366)
EU membership		418.558**	443.606***	423.302***
		(160.262)	(153.870)	(150.404)
Programmatic Environmental Salience $_{(t-1)}$ *x Natural Resource Rents* $_{(log)}$				-40.911***
				(14.900)
Observations	181	179	179	179
R^2	0.050	0.174	0.246	0.287
Adjusted R^2	-0.222	-0.097	-0.009	0.038
F Statistic	3.669** (df = 2; 140)	4.040*** (df = 7; 134)	5.426*** (df = 8; 133)	5.898*** (df = 9; 132)
Note:				*p<0.1;* ***p<0.05;*** p<0.01

Table A3.6: Models *2a, 2b, 2c,* and *2d* Using logged measure of Natural Resource Rents

This test is of particular importance in light of the positive skew that characterises the variable of natural resource rents. Results are found to be robust even when the log-transformed variable is used.