

# Green Energy Transition, Vested Interests, and Democratic Institutions: Policy retrenchment in renewables in Europe

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## Abstract

*Subsidies given to renewable energy technologies are a critical component of energy transition. To support the transition to green energy, European governments have provided substantial subsidies to the renewable energy sector since the early 1990s. Subsidies are usually given only temporarily: When the market for new renewable technologies matures and becomes competitive, the government is usually supposed to roll back subsidies gradually. As the cost of installations decreases over time, there should be a corresponding and timely reduction in subsidy levels. This is, at least, what established state aid rules in European countries suggest. In reality, however, it may not be always easy to achieve such optimal conditions in a subsidy regime. Here, the theory of policy retrenchment suggests that once granted, economic privileges such as subsidies can also become difficult to take back due to opposition and vested interests in the burgeoning sectors. I argue that the logic of policy retrenchment also holds in the case of renewable policy support and that underlying policy dynamics can be susceptible to vested interests, as in any other policy issue areas. Indeed, policy makers often struggled to orchestrate their attempts to reduce subsidies with real-time market conditions. Moving forward, I argue that the design of political institutions mediates the way the organized interests of renewable energy sectors influence governmental decisions as institutions can enhance policy constraints in decision-making process by diffusing political power: In countries where institutions distribute political power over a broader array of actors, both horizontally and hierarchically, renewables sectors can protect their interests better thanks to their interest representation at different institutional layers/levels. To specify causal pathways in my argument, I utilize a comparative case study drawing on Germany and the United Kingdom (UK). In addition, I complement my analysis with a large-N study based on an original dataset covering 104 episodes of policy support reduction in 18 OECD countries between 2009 and 2025.*

**Keywords:** climate policy, vested interests, democratic institutions, renewables, Europe

## 1. Introduction

Policy support given to renewable energy sectors like subsidies have played an important role in the European countries' endeavors to achieve a green energy transition. Considering their relatively high cost at the beginning, renewable energy sources like wind, solar, and biomass power are not likely to be able to compete with cheaper conventional carbon-based energy sources like gas and oil, without subsidies. However, subsidies are usually distributed on a temporary basis: When the cost of renewable technologies reaches a level that enables them to effectively compete

with traditional energy sources, it is often expected that the government would reduce or eliminate subsidies.

Removing subsidies after a certain period has its own economic and political logic for policymakers. First, subsidies are likely to disrupt competition in free markets. The European Commission has continuously advocated for eliminating subsidies in the member states so that the Common Market of the Union could be competitive enough without distortions from state interventions. That is why subsidies have been seen as an exemption that should be used as a last resort when there is a risk of market failure.

Furthermore, due to their costs to citizens, maintaining subsidies constitutes a political cost for policymakers who are expected to offer more affordable public policies. Thus, abolishing subsidies is politically convenient when conditions are suitable. Given this, subsidies given to renewable industries should expire at some point, ideally sooner than later. However, the theory of policy retrenchment tells us that this is not usually an easy process: Once given, it is often difficult hard to scale back. In this regard, the developments that the European PV market went through beginning in 2009 offers a unique opportunity to examine whether a similar theoretical insight can be extended to the green energy transition: At the time, the collapse in global PV prices, driven mostly by cheaper imports from China, made PV installations financially attractive. Yet, as governments were inundated with growing demand for subsidies, they quickly implemented a series of reductions, sometime retroactive, in the policy support given to the PV sector.

My study shows that the experience of many European countries offers substantial support for the theory of policy retrenchment: While governments have a public responsibility to adopt the policies needed to address climate change, the underlying dynamics of policy provision in the green energy transition can be also susceptible to vested interests, as in any other policy issue areas. Not only may interest in green investments sometimes stem primarily from economic motives, but also can vested interests often form around these investments, at times advancing particularistic interest at the expense of broader public interest. Indeed, the European governments' attempts to cut back subsidies have, from time to time, faced backlash. Policy makers often struggled to orchestrate their attempts to reduce subsidies with real-time market conditions.

Moving forward, my research also examines how this policy-making mechanism between the government and the renewable energy sector is mediated by democratic institutions. There is a meaningful a variation across countries that makes this inquiry worthwhile: While some governments have been able to introduce swift subsidy cuts, some others have been relatively less

successful in doing so. My study shows that that in the countries in which institutions diffuse political power over a broader range of actors<sup>1</sup>—both horizontally and hierarchically—renewables sectors are more likely to protect their interests because distribution of political power offers alternative venues for interest representation at different institutional levels. In other words, the design of political intuitions and distribution of political power can either weaken or enhance the institutional access of the renewable sector to policy-making processes. Such political configurations, in turn, reinforce the path-dependent dynamics, make the withdrawal of economic privileges such as subsidies harder for the government.

To specify the causal mechanisms involved in my argument, I deploy a comparative case study drawing on the energy transition experiences of Germany and the UK. Here, more specifically I exploit both cross-case and within-case variations in power diffusion and the associated design of political institutions in these two countries. Then, to test whether a similar relations can hold in a broader scope, I complement my research design with a large-N approach drawing 104 episodes of policy support cuts for the PV sector in 18 OECD countries between 2009 and 2025.

More specifically, the comparative case study reveals that the organized interests of the renewable energy sector in Germany achieved better opportunities to gain concessions in the subsidy degression process between 2009 and 2013 thanks to the German political institutions that dissipated the power among a larger number of actors. The political institution in question here was more specifically federalism, which provided more institutional access to the renewable energy sector at different layers in a vertical way. Thanks to this institutional access, the sector could better safeguard its economic interests in the face of heightened subsidy cuts. Ultimately, the impacts of severe subsidy cuts were crushing for the German solar industry, but institutional access helped mitigate the process.

On the other hand, the renewable energy sector in the UK did a less impressive job moderating severe subsidy cuts plans by the government during a similar time. This was partially due to their less impressive and organized interests. Regarding business size, employment figures and associational power, the solar industry in the UK had less strength. With that said, the lack of a federal structure also played a role in the contrasting outcomes between the two countries: The institutional configurations in the UK usually concentrated the political power which in turn enabled faster and more drastic reductions in renewable subsidies.

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<sup>1</sup> For a related discussion on political institutions and power, also see Gerring and Thacker, 2008.

The differences in the design of electoral institutions, on the other hand, proved to be less instrumental in accounting for the different success rates of both countries' solar sectors in achieving economic concessions from the government during the subsidy cuts. This is because the policy stances of the junior coalition partners were not suitable to do a sound comparative analysis. With that said, the within-case variations in both countries are still helpful to show that the solar sector benefited from the diffusion of political power, when the junior coalition partners assumed a more pro-environmental policy position than the senior coalition partner, widening the ideological range of the government. This was the case in the UK when Liberal Democrats compromised the policy stance of the Conservatives<sup>2</sup> when the latter attempted to introduce severe subsidy cuts. When there was a one-party government again in 2015, the Conservative Party encountered fewer limitations in their ability to reduce subsidies. Likewise, during the late 2000s, the SPD, as the coalition partner, played a role in moderating the CDU/CSU's plans to make drastic subsidy cuts. When the pro-business FDP replaced the SPD as the coalition partner, the impact of coalition governments as a policy constraint disappeared as the FDP shifted the CDU/CSU's policy position away from what the solar sector intended. The analysis here certainly shows that power diffusion stemming from the design of political institutions can provide alternative institutional access to policy making for economic actors, only if these institutions widen the ideological range of the government in line with the particularistic interests of those actors.

The findings of the quantitative study based on OECD data suggest that the relationship identified in the comparative case study also travels across the broader set of cases: Although the evidence is suggestive rather than definitive, the study shows that countries with stronger upper legislation bodies are more likely to experience moderation of government attempts to reduce policy support for the PV sector. This finding is broadly consistent with the veto players literature, but it also introduces an important qualification by drawing attention to the normative dimensions of democratic institutions, as emphasized in various stands of the literature on consociational democracy, deliberative democracy and the civic culture. Indeed, the in-depth investigation of the cases also indicates that political institutions do not work in vacuum, but are accompanied by a considerable body of informal rules and procedures.

While mainly confirming the explanatory value of existing literature concerning the impacts of political institutions on policy making, this finding cautions against institutional determinism, a point that can be helpful to reinterpret some competing explanations in the literature in an energy

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<sup>2</sup> Anonymous interviewee data

transition context. These theoretical contributions also carry practical implications, suggesting that policy-makers should design long-term projection of their policies in light of the capacities of their political institutions and the broader political culture in which those institutions operate.

After this introduction, the following section provides a theoretical framework. The third section explains the methodical considerations. In the fourth section, I conduct the comparative case study. The fifth section presents the findings of the large-N analysis. In the sixth section, I discuss institutional determinism and vested interests. In the conclusion, I consider the practical implications of the findings from a policy-making perspective.

## **2. A theoretical Framework**

The starting point of this research theoretically draws on the literature on the retrenchment of the welfare state: Focusing on social policy making in democracies, this literature argues that it is hard to roll back social benefits. The difficulty in cutting back welfare entitlements, according to Paul Pierson (1996), stems from various reasons such as potential backlash from constituents, resistance of interest groups, psychological salience of welfare retrenchment practices resulting in visible socio-economic costs for specific people vis-à-vis welfare expansion bringing about negligible burden in broader tax base.

In the first place, it may seem challenging to apply the logic of welfare state retrenchment to green subsidies. After all, here we talk about two different spheres: welfare spendings and market. The government does not promise providing for the latter in the long run: Subsidies for market are usually provisional, usually dependent on maturation of subsidized technologies. With that said, by their nature, entitlements provided in the market still resemble those in social sphere. Once extended, it is also logical to expect that subsidies are difficult to roll back like social entitlements. The literature on fuel subsidies provides supporting evidence here: The studies in this literature suggest that reforming fossil fuel subsidies is extremely difficult, explaining this situation with a variety of factors related to political leadership, reform capacity and structural factors (Inchauste and Victor, 2017, Skovgaard, and Van Asselt, 2018, and Martinez-Alvarez, et al., 2022).

In addition to the literature on rent-seeking industries, the existence of interest-based lobbying in environment is also instrumental to understand why it might be difficult to roll back entitlements provided to the green energy sector: Indeed, over time, generous subsidies in European countries have led to not only strong renewable energy sectors but also the rise of substantial vested interests in them. In particular, the contribution of citizen-led energy cooperatives economic output

at a local level has been remarkable, increasing both their popular support and political importance (Moe, 2012, Debor, 2014, Huybrechts and Haugh, 2018, and Özgül et. al., 2020). With developing economic resources, their associational power has also grown a lot, visibly seeking better policy outcomes for their interests by influencing policy-making processes (Michaelowa, 2005, and Sühlsen and Hisschemöller, 2014).

Regarding democratic institutions, the theoretical framework of this paper builds upon the previous literature on the relationship between institutional aspects of government and policy making, especially reform capacity. Many studies in this literature investigate the impact of political institutions on policy making from various perspectives such as federalism (Campbell and Morgan, 2005), constitution (Binder, 2004), presidentialism (Keeler, 1993), and governmental compositions (Bellamy, 2012, and Knotz, 2015). The literature also documents the impact of institutional designs on policy reform in terms of agency, as the support of political actors —be it from the right or left— and players in the market —like the business or labor—for particular arrangements of political institutions takes shape depending on their distributional outcomes (Cusack, Iversen and Soskice, 2007, and Iversen and Soskice, 2015). In the same vein, there is also research studying how political institutions such as governmental composition and electoral systems can influence the relationships between the government and business (Martin and Swank, 2008, and Anthonsen and Lindvall, 2009) and prevalence of consensus-seeking tendencies (Martin and Mansbridge 2013)

Within the same literature, a significant number of studies also focus on how political institutions affect effectiveness in governance: For instance, Moe and Caldwell (1994) argue that institutional arrangements based on marked separation of power and checks and balances usually lack effective governance and democratic control over policy-making, mired in regulations and rules. Similarly, other scholars point out the difficulty of reaching consensus in public policy in the political systems engendering incongruent governments (Immergut and Orłowski, 2013, and Guinaudeau and Guinaudeau, 2023). Scholars also indicate that institutions with divided political power may lead to a problem of oversupply in the public sector by succumbing to a wider range of narrower interests. (Cox, and McCubbins, 2000).

On the other hand, there also exists competing viewpoints whether institutions with political fragmentation do necessarily bring along negative consequences or not. To illustrate, Lindvall argues that power-sharing systems can have higher reform capacity compared to majoritarian systems if they can resolve problems related to bargaining like accommodation of losers (2017). Despina (2013) also reaches a similar finding arguing that large coalition governments were more

successful in downsizing welfare entitlements in comparison to narrower majority governments. Several studies in the literature also associate the power-sharing political systems like proportional representation with positive and socially efficient policy making such as lower income inequality, stricter environmental regulations, decommodification and less partisan policy-making (McGann and Latner, 2013), Finnegan, 2022, and Schmidt, 1996, Crepaz, 1998). In short, even though it seems plausible to view that institutions featuring political fragmentation and power-sharing dilute the mandate to enact policy reforms (Guinaudeau and Guinaudeau, 2023), the findings in the literature do not have a consensus.

Needless to say, the literature on design of political institutions and policy-making is closely related to veto-players literature. Led by Tsebelis's works, this literature studies how arrangement of political institutions, when combined with partisanship, can shape a government's capacity to introduce policy change. Accordingly, the political institutions with more veto-players are more likely to have policy stability, stifling prospects of political reform. Yet, like the literature on political institutions and policy making, it is hard to say that there rules a consensus in the findings of veto-players literature: Despite the works by Tsebelis and many other scholars (e.g., Szakonyi and Urpelainen, 2014) arguing for policy stability effect of veto players, there are also studies show that veto players can actually encourage policy change (Campbell and Morgan, 2005, and Gehlbach, 2010) and their impact on policy outcomes may depend on many other accompanying factors such as electoral cycle, issue salience and presence of interests mediations (Immergut and Orłowski, 2013).

The crux of veto players argument also seems not to sit easily with Lijphart's study: Lijphart argues that many consensus-building democracies seek to expand winning-majorities by encouraging wider political participation (2012) (Jahn, 2016), even though this practice may appear self-defeating in terms of policy effectiveness—at least from the perspective of the veto players theory. In addition to the literature on consociational democracy, other strands of the literature such as deliberative democracy and civic culture also place greater emphasis on the normative dimensions of democratic institutions without, while also recognizing the role of institutions in shaping interactions among political actors (Almond and Verba, 1963, Levitsky and Ziblatt, 2018, and Huq and Ginsburg, 2018).

The particular case of renewable subsidies after 2009 offers an opportunity to study how the wide array of theoretical orientations discussed above play out in the context of green energy transition. This endeavor has several utilities at theoretical level: First, it helps us assess whether

the explanatory power of the theocratical strands specified above travels to this particular aspect of the green energy transition—more specifically checking for confirmatory and disconfirmatory evidence, and considering any need for theoretical revision. Considering the competing views of impact of political intuitions on policy making, the research here offers an alternative contribution reconcile these views in an energy transition context.

This contribution here also extends a specific body of literature in comparative political economy that study the intersection of policy constraints and environmental politics. Situating this paper within this literature helps clarify the particular lineage it shares with earlier studies. One strand of this scholarship focuses on how domestic policy constraints shape policy outcomes in the international sphere such as international environmental agreements (Fredriksson and Ujhelyi, 2006), the impact of trade competition on regulatory practices in the sphere of environment (Cao and Prakash, 2012), and the effect of partisan differences in participation in environmental treaties (Schulze, 2014). Another strand examines how policy constraints shape outcomes at the domestic level, addressing a wide array of research questions like relationships between electoral institutions and environmental taxation (Poloni-Staundinger, 2008), direct democracy and implementing drastic climate change reforms (Stadelmann-Steffen, 2011), veto players and policy blockages in environmental policy (Immergut and Orłowski, 2013), electoral institutions and climate change stringency (Finnegan, 2022), and veto players and climate policy adaptation rates (Madden, 2013).

### 3. Methodology

The case studies are based on the experiences of the solar sector in Germany and the UK. Both countries offer prolific cases to study the impact of institutions and associated diffusion of political power on policy outcomes because they show considerable variation in this regard. In addition, both countries also exhibit within-case variations. The empirical research for the comparative case study draws on extensive qualitative from an umbrella research project involving 65 semi-structured interviews with various experts and knowledgeable people from NGOs, business and politics in Germany and the UK. Interviews were conducted using purposeful and snowball sampling techniques. Additionally, the empirical case studies are informed by the analysis of parliamentary documents<sup>3</sup>, gray literature and a systematic investigation of niche media outlets

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<sup>3</sup> German Bundestag's data source DIP: Das Dokumentations-und Informationssystem für Parlamentsmaterialien, see <https://dip.bundestag.de/>, and British Parliament Westminster's digital library Hansard, <https://hansard.parliament.uk/>.

related to the solar sector in Germany and the UK like *PV Magazine*. Further details about these data sources will be made available in a publicly accessible Transparency Appendix (TRAX) where I maintain the underlying raw empirical materials.<sup>4</sup> Throughout the paper, the footnotes include frequent references to relevant materials in the TRAX.

The interview protocol usually included a set of core questions, followed by various prompts tailored to the respondent's expertise and/or institutional role, as well as to the context of conversation. Thematically the interview questions addressed how Germany and the UK financed their energy transition policies, how the costs of policy support were distributed across the society and economy, and how interest politics impacted policymaking dynamics. The paper cites interviewees anonymously. The appendix provides descriptive statistics on the interviewees, together with additional information about the interview procedures.

The starting point for the quantitative analysis was originally the OECD's feed-in tariff data. However, constructing panel data based on this source would not provide information fully consistent with the logic of policy retrenchment, as in the dataset, the feed-in tariff rates were averaged and also included automatic digressions that were not necessarily the result of political bargaining. To mitigate this limitation, I constructed an original data set covering episodes of policy support cuts for the PV sector between 2009 and 2025, using various publicly accessible media, sectoral and official sources. To preserve the integrity and flow of the quantitative analysis presented in the fifth section, I defer further discussion of the data, including its measurement and operationalization, to the relevant section.

#### **4. A comparative case study approach: Germany and the UK**

##### *Policy contexts and the cross-case and within-case differences in concessions*

In Germany, the green energy transition mostly draws on the feed-in tariff (FiT) system provided by the EEG law (Erneuerbare-Energien-Gesetz). The law enables renewable electricity producers to sell the electricity they produce from renewable sources directly to the grid with a guaranteed price by the government for 20 years. The guaranteed price includes a market premium added on top of the average electricity price in the market. In most cases the FiT has turned into a very attractive and profitable investment opportunity for German citizens: By installing photovoltaic panels on their rooftops, many households both used clean energy and earned money by selling the

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<sup>4</sup> Please see "Transparency Appendix (TRAX) for Green Energy Transition, Vested Interests, and Democratic Institutions: Policy retrenchment in renewables" at <https://sites.google.com/view/mehmethecan/data>.

excess electricity output to the grid thanks to smart meters. This investment security is the main reason the citizen-led energy transition has become so successful in the country.<sup>5</sup> The state does not pay for the guaranteed price, electricity consumers pay for it as the costs are passed on to electricity bills. That's why, the German government introduced an automatic degression mechanism in the EEG so that the interests of electricity consumers would not be harmed due to over-subsidization. In line with gradual decreases in the installation costs, the guaranteed price offered for solar energy decreased each year starting in 2004.

Nonetheless, the German subsidy regime for solar started to be overwhelmed when the costs of solar energy dramatically decreased more than expected. Especially when the cheap Chinese PV panels started to invade the European market in 2009, the installation costs were reduced dramatically, resulting in greater profits for people and commercial companies which installed solar panels and sold the electricity to the grid. Even though this situation benefitted solar energy sellers in the market, the economic interests of household and commercial electricity consumers started to be undermined as they paid the guaranteed price. Recognizing the looming problem of over-subsidization, the German policymakers, specifically the newly established CDU/CSU and FDP coalition government, wanted to introduce significant solar subsidy cuts to protect the economic interests of electricity consumers. The organized interest groups representing the solar industry like Bundesverband Solarwirtschaft (BSW) resisted such cuts, arguing that these cuts would undermine the German solar industry, which turned into a success story and employed hundreds of thousands of Germans. Likewise, pro-environmental NGOs organizations like Greenpeace Germany, and associations like IG Metall<sup>6</sup> and Deutscher Bauernverband (the German Farmers' Association)<sup>7</sup> joined such calls. The solar energy sector agreed that remunerations were high, but usually lobbied for moderate cuts. There were even protests in Berlin in February 2010 to stop this. When the government tried to introduce similarly harsh cuts in 2012, the sector organized similar protests in the capital in March 2012. In due process, the German government could still proceed with its plan to cut the subsidies for solar energy, but only with revisions. In the years between 2008-2013 when the German government attempted to introduce drastic subsidy cuts, the German solar sector was able to get at least some concessions from the government to safeguard its interests. These

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<sup>5</sup> Also see Mitchell et al., 2006.

<sup>6</sup> The main labor union for metalworkers' union in German

<sup>7</sup> The German Farmers' Association

concessions included moderations in subsidy cuts, delay in policy implementation, and economic aid (see table 1 below).<sup>8</sup>

*Table 1. Policy process of subsidy cuts in Germany*

| Concession Type                                       | Reason                                              | Year | Policy change details                                                  |                                                                                                                                                                |
|-------------------------------------------------------|-----------------------------------------------------|------|------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                       |                                                     |      | Initial plans/drafts                                                   | Final policy implementation                                                                                                                                    |
| Moderation                                            | Compromise with the coalition partner               | 2008 | 30 to 50% cuts                                                         | 10% cuts                                                                                                                                                       |
| Moderation, Postponement and Economic support         | Compromise with the upper chamber of the parliament | 2010 | 15 to 25% cuts on April 1 <sup>st</sup>                                | %13 on July 1 <sup>st</sup> plus 3% on October 1 <sup>st</sup> ; and 100 million euro worth research program for the eastern states                            |
| None                                                  | NA                                                  | 2011 | 15% cuts                                                               | No change                                                                                                                                                      |
| Postponement and Economic support                     | Compromise with the upper chamber of the parliament | 2012 | Various cuts for different installation types on March 9 <sup>th</sup> | Similar cuts for different installation types on June 30 <sup>th</sup> and September 1 <sup>st</sup> respectively; and low-interest loans from KfW for storage |
| <i>Source: Author's own compilation, see Trax 029</i> |                                                     |      |                                                                        |                                                                                                                                                                |

Unlike Germany, the UK used a policy instrument called renewable obligation (RO) to promote renewables. Introduced in 2002, the RO mandated that utility companies meet a certain percentage of their electricity from renewable sources. Later on, however, the UK government also introduced the FiT system. While the use of the FiT system dates back to 1991 in Germany, the UK government introduced it very late, in 2010. At the time, the objective was partially to meet the renewable energy targets set by the EU Commission, as the instrument promoted a fast community-led energy transition. Being attracted to the idea of promoting renewables, as in Germany, the Conservatives originally spoke out for implementing the FiT when it was in opposition in the late 2000s.<sup>9</sup> However, in one sense copying the idea from the Conservatives, the Labor government introduced the FiT during the final months of its rule in 2010.<sup>10</sup> When the Conservatives rose to power with Liberal Democrats in the same year, they maintained the FiT. However, soon after the FiT scheme started to be implemented, the UK government felt compelled to slash solar subsidies

<sup>8</sup> This paragraph draws upon the information compiled in Trax 002.

<sup>9</sup> Trax 003

<sup>10</sup> Anonymous interviewee data

drastically. due to both reductions in the costs of solar installations and popular demand exceeding expected installation rate. The Conservatives-Liberal Democrats coalition government started to articulate its plans to review and reduce the FiT subsidies for solar earlier than planned even though the official review was scheduled for March 2012. The David Cameron government argued that the preceding Labor government introduced the FiT as an ill-advised policy design due to its generous support mechanism.<sup>11</sup>

Understandably, the Cameron government's plans to slash solar subsidies faced significant opposition from the UK's nascent solar industry. Starting as a small industry employing around 3,000 people, the UK solar industry soon turned into a sizable one employing around 30,000 by that time.<sup>12</sup> Arguing that the planned proposals to reduce subsidies would devastate the industry and endanger thousands of jobs, they tried to convince the UK government to undertake moderate cuts than proposed. The 2011 "Cut, Do Not Kill" campaign was for that. However, it failed to gain concessions from the UK government, and the government slashed solar subsidies in the FiT severely earlier than expected. In the following years, likewise, the governmental plans to reduce subsidies encountered opposition. However, the government usually moved on with its subsidy cuts plan without moderating its position and offering any concessions even though there was substantial resistance from the sector during the required consultation period. The table below (table 2) shows that the UK government usually reduced subsidies without major revisions.<sup>13</sup>

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<sup>11</sup> Anonymous interviewee data

<sup>12</sup> Trax 004

<sup>13</sup> This paragraph draws upon the information compiled in Trax 005.

Table 2. Policy process of subsidy cuts in the UK

| Concession Type                                | Reason                                                  | Year | Policy change details                                                                        |                             |
|------------------------------------------------|---------------------------------------------------------|------|----------------------------------------------------------------------------------------------|-----------------------------|
|                                                |                                                         |      | Initiatives/plans/drafts                                                                     | Final policy implementation |
| None                                           | NA                                                      | 2011 | 50% cut                                                                                      | No change                   |
| Postponement                                   | Compromise with intra-party fractions/coalition partner | 2012 | Planned cuts on July 1 <sup>st</sup>                                                         | August 1 <sup>st</sup>      |
| None                                           | NA                                                      | 2014 | Ending policy support for installation projects of 5 megawatts or above                      | No change                   |
| None                                           | NA                                                      | 2015 | Early termination of the renewable obligation program for new solar plants under 5 megawatts | No change                   |
| Moderation                                     | Compromise with the intra-party fractions/solar sector  | 2015 | 87% cut                                                                                      | 64% cut                     |
| Source: Author's own compilation, see Trax 030 |                                                         |      |                                                                                              |                             |

Comparing the two tables above, it is possible to say that in contrast to the experience in Germany, the solar sector in the UK faced more dramatic subsidy cuts, usually not receiving any major form of concession from the government either in terms of moderation, timing or economic support as a side payment. What explains the differences in the subsidy regime in both countries? Why did Germany have more difficulty rolling back subsidies given to the solar industry, whereas the UK did not? Of course, the conventional explanation of organized interests can provide an answer here. As the solar industry was more powerful in Germany than the British one, it was more effective in securing its economic privileges and entrenched interests. In addition, in comparison to years-long strong policy support for solar industry in Germany, the UK's commitment to supporting a domestic solar industry came very late and weak. To a certain extent, the country's weak political commitment stemmed from its low solar energy endowment due to geographical reasons prompting the government to support other renewable technologies with higher endowment more, especially offshore wind. Given the weak build-up of solar sector under a flimsy political commitment, it is not surprising that the UK elbowed aside this sector relatively easy whereas Germany faced a solid

resistance from a consolidated solar sector. These factors certainly played a pivotal role in both countries' differing treatments of their solar sectors during subsidy cuts. That said, trying to account for the cross-case differences by just looking at organized interests and political commitment does not give a full picture of explanations. Institutions and associated power distribution also matter as the organized interests permeate decision-making through the access provided by institutions. Dynamics related to institutions can still demonstrate themselves in the cases with differing underlying conditions such as political commitment, state capacity, availability of finance etc. Indeed, the reason columns in the tables above (tables 1 and 2) show that the policy process of subsidy cuts in Germany underwent changes due to the compromises between the upper and lower chambers of the parliament. Such an institutional dynamic was missing in the UK as the country did not have a federal structure in terms of governance. As a possible functional equivalence of Bundesrat, the House of Lords served as the upper chamber of the parliament, but it rarely served as a meaningful policy constraint when the Conservative-led governments pushed for severe subsidy cuts. By contrast, the subsidy cuts in Germany faced more policy constraints due to the opposition from the federal states, Länder, though the Bundesrat. In this sense, institutional variation between the two countries in terms of federalism is instrumental in accounting for the cross-case differences in the success rate of the solar sector in safeguarding its interests.

On the other hand, federalism is not the only type of political institution that adds policy constraints to the decision-making process by diffusing political power. Other institutional dimensions diffuse political power among various actors vertically and horizontally at different levels. Electoral institutions are also one of them. The variation here can be also a potential explanatory factor for the cross-case differences because both countries also vary in this respect. Nevertheless, the variations in electoral institutions do not help account for the cross-case differences as the policy stances of the junior coalition partners were not suitable for a sound comparative analysis—the FDP did not align itself with the interests of the solar sector in Germany, whereas Liberal Democrats did in the UK. However, the within-case variations in both countries are still useful to demonstrate the potential impact of electoral institutions on positive policy outcomes by widening the ideological range of the government to the interests of the solar sector when a junior coalition partner adopted a more pro-environmental policy position than the senior coalition partner. This happened in the UK when the Conservatives attempted to enact drastic subsidy cuts and the Liberal Democrats compromised their policy stance. In 2015, when there was a one-party system again, the Conservatives were less strained in lieu of Liberal Democrats in the

government.<sup>14</sup> Similarly, as a coalition partner, the SPD helped to temper the CDU/CSU's plans to implement significant subsidy cuts in the late 2000s.<sup>15</sup> The impact of coalition partners as a policy constraint vanished when the pro-business FDP replaced the SPD because the FDP compromised the CDU/CSU's policy position in the opposition direction by demanding severe cuts. In sum, both cross-case and within-case differences in Germany and the UK show that political institutions like federalism and electoral institutions can considerably mediate the way the organized interests shape policy-making processes.

### *Accounting for the impact of institutions and power distribution*

#### *Federalism*

Differences in federalism are one important source of power distribution. By divvying up political power between the federal government and local governments, federalism contributes to the diffusion of political power in a vertical way and adds political constraints in decision-making processes. This is, of course, conditional on potential divergence between the policy positions of both federal government and local governments. The institutional design makes a difference only when there is a remarkable divergence in their policy positions. And the divergence only makes a positive contribution to a renewable energy sector if the local governments compromise the policy stance of the federal government in the direction of pro-environmentalism. In the cases in which their policy stances are highly aligned, the institutional differences are not likely to impact policy outcomes.

Among all political institutional arrangements including electoral institutions, the differences in federalist structure have had the most significant impact on the subsidy regime in Germany. As a country with a federalist structure, the federal states were influential in moderating the government's steep subsidy reduction plans and seizing concessions for the solar industry. Regarding institutional design, the German legislative bodies consist of two institutions: i) Bundestag—the lower chamber of the Parliament—and ii) Bundesrat—the upper chamber of the Parliament. While the Bundestag serves as a usual parliamentary body in which the Federal government takes action as in many other European democracies, the Bundesrat acts as a federal council in which 16 federal states, known as *Länder*, are represented. Most legislative actions require approval from the two legislative bodies. Thus, each institution can be an effective policy

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<sup>14</sup> Anonymous interviewee data.

<sup>15</sup> Trax 006

constraint or veto player. The Bundesrat has been usually an active veto player since the 1980s due to the incongruence of the chamber's majority with the governmental coalition.<sup>16</sup> With that said, not all legislative actions necessarily require approval from the Bundesrat, including the laws related to subsidies given to the renewable energy sector. Despite this, the Bundesrat still served as an influential policy constraint in the decision-making process by enabling the solar sector to gain concessions from the German federal government. This was not thanks to its conventional absolute veto right it wielded but its ability to delay legislative actions by referring them to the Mediation Committee (Vermittlungsausschuss)<sup>17</sup>—a body set up to resolve the conflict between the two legislative bodies. The Federal government could have re-sent its draft bills to the Bundesrat without any change even if it had not agreed to any concession offered by the Mediation Committee. The Bundesrat had only one chance to take a legislative bill to the Mediation committee, and it had to finally approve it if it had been resent by the Bundestag. Nevertheless, despite not possessing an absolute veto authority, the ability to prolong the process and gain time constituted the Bundesrat's most powerful institutional power during the subsidy cuts. Moreover, even if the Bundestag did not have an absolute veto over the issues related to subsidies, resolving political disagreements through a compromise and consensus was almost an established practice in German politics as a deliberative practice. By tradition, the federal government restrained itself using its institutional power to a full extent, often seeking a middle way through political bargaining with Bundesrat. When combined with this tradition, the Bundesrat wielded a *de facto* institutional power and usually used this power to signal the opposition at a local level against the federal government on the subsidy cuts.

Especially in the two episodes of subsidy cuts in 2010 and 2012 (see the table 1 above), the Bundesrat effectively used that power: It did so first by threatening to take the issue to the Mediation Committee and ultimately did so when needed. Once the mediation committee was summoned, the Bundesrat was able to help the solar industry gain remarkable concessions like moderate subsidy cuts, postponement and economic support. When the demands of the solar industry were not received well by the federal government in the Bundestag, the Länder advocated on their behalf them in the legislative process. In this sense, it provided alternative access to policy making for the solar sector. This was mostly because the state governments did want to preserve the solar industries in their vicinities, which provided significant economic activity and employment. This was

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<sup>16</sup> Immergut and Orlowski, 2013.

<sup>17</sup> Bundestag, 2023. "Vermittlungsausschuss", <https://www.bundestag.de/vermittlungsausschuss> also see: <https://www.bundestag.de/en/committees/mediation>, also see: Gründiger, 2017.

especially the case for the eastern German states.<sup>18</sup> In the eastern states, where the economic activity was flimsy compared to the rest of the country, the economic value of the solar industry was more vital. Thus, the opposition from these states was more visible.<sup>19</sup> In states such as Saxony, Saxony-Anhalt and Thuringia, the state governments objected to the severe subsidy cut plans and demanded moderation in adjusting subsidy levels, even though the governments in these states were led by the ruling CDU/CSU and FDP parties.<sup>20</sup> Many times, the Lander opposition against the Federal government's subsidy cut plans was also across the party lines and east-west boundaries, as other federal states such as Rhineland-Palatinate, Saarland, Bremen and Bavaria also encouraged negotiations between the two chambers of the German Parliament.<sup>21</sup>

The power of Bundesrat in shaping public policy outcomes also demonstrated itself in the political maneuvering of German law-makers: For instance, when the Economic Minister Philip Rosler and Environment Minister Norbert Rosler introduced their draft bills for subsidy cuts, they were concerned about the potential pushback from the states and tried ways to convince the Länder, preemptively before the issue was not taken to the Mediation Committee. Also, some pro-business fractions inside the ruling CDU/CDU and FDP which advocated for more drastic cuts were also aware of the opposition inside the Bundesrat, including the states ruled by their own parties. And they were actually relieved that the subsidy changes were not subject to consent law in which the Bundesrat had absolute veto power.<sup>22</sup>

In the early 2010s, the German government felt pressure to slash subsidies on multiple occasions in the face of continuous and steep decreases in installation costs. However, the need to deliberate the subsidy cuts with the Länder also exhausted the Federal government's political patience because the constraints in the German political institutions ground down their political initiatives. Especially in the 2012 episode of subsidy cuts, realizing the difficulty of altering the renewable subsidy regime and rolling back the associated economic privileges through deliberation, the Economic and Environment Ministers did want to strip the Bundesrat of its institutional power simply by making the changes to renewable subsidies subject to ordinances by the government rather than separate legislative actions through both chambers of the Parliament. However, even the ruling CDU/CSU and FDP party members opposed this idea of disempowering Bundestag and

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<sup>18</sup> Trax 007

<sup>19</sup> Trax 008

<sup>20</sup> Trax 009

<sup>21</sup> Trax 010

<sup>22</sup> Trax 011

Bundesrat and strengthening the hand of the executive branch vis-à-vis the legislative branch. As a result, both ministers had to withdraw their proposal from the draft bill.<sup>23</sup>

In short, even without a formal veto power, the Bundesrat in the architecture of German political institutions played an important role in shaping the public policy outcomes for renewable subsidies to the interests of the German solar sector. The Länder inside the Bundesrat served as an alternative institutional venue of interest representation for the sector when it did have difficulty in institutional access to policy-making at the federal government level. In contrast to Germany, the UK did not have a federal structure that could vertically distribute political power. Beginning in the late 1990s, the Blair government initiated a devolution process<sup>24</sup> to grant more political powers to the National Assembly for Wales, the Scottish Parliament, the Northern Ireland Assembly, and the Greater London and Local Authorities.<sup>25</sup> Nevertheless, local governments could not build autonomous energy policies over time, instead relying heavily on directives from the central government.<sup>26</sup> The potential influence of local governance on energy policy further weakened in the 2010s when the Conservative rose to the power.<sup>27</sup> Even Scotland, which enjoyed relatively more autonomy relative to other regions due to its political dynamics, mostly bandwagoned the energy transition policies of the central government due to the concerns of market disruptions.<sup>28</sup> Although Westminster devolved more powers—including taxation—to Holyrood in 2012 and 2016, it preserved its mandate over most energy issues.<sup>29</sup> The Scottish government tried to exert more pressure on the Cameron government, especially due to the crackdown on the renewable sector, especially for onshore wind, but this pressure did not utilize any institutional power other than sending letters encouraging the government to revise its retrenchment policy.<sup>30</sup> In this sense, the UK solar sector lacked alternative layers of political institutions that could have facilitated their access to policy-making.

In lieu of empowered local administrations, the existence of a bicameral system in the country, particularly the House of Lords as the upper chamber of the parliament, could have served as a political constraint to the favor of the solar sector. Yet, regardless of the chamber's policy

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<sup>23</sup> This paragraph draws upon the information compiled in Trax 012.

<sup>24</sup> See *Civil Service*, “Devolution: Factsheet”, 2022, [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/770709/Devolution\\_Factsheet.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/770709/Devolution_Factsheet.pdf)

<sup>25</sup> See UK parliament, “Devolution”, 2023, <https://www.parliament.uk/site-information/glossary/devolution/>.

<sup>26</sup> Anonymous interviewee data, also see Trax 013.

<sup>27</sup> Anonymous interviewee data

<sup>28</sup> Trax 014

<sup>29</sup> Anonymous interviewee data

<sup>30</sup> Trax 015

position related to the subsidies for the solar sector, this was not possible because the Parliament Acts in 1911 and 1949 stripped the chamber of any veto right, only limiting it to the parliament's request to extend its mandate beyond five years. In certain policy areas, the House of Lords has an ability to delay the legislative actions, including climate change policies, for up to one year.<sup>31</sup> On paper, this institutional power may seem similar to that of Bundesrat. In 2011, making a last-ditch effort, the representatives from the UK solar sector also took the fight to the House of Lords to save the subsidies.<sup>32</sup> However, this did not change the outcomes at all. This was because the House of Lords served as a nonpartisan body by tradition.<sup>33</sup> The past practices such as the 'Salisbury Convention', prevent the House of Lords from blocking bills introduced by the ruling parties in the House of Commons, especially if such bills are related to commitments to elections manifestos.<sup>34</sup> As a rarity, the House of Lords blocked the subsidy cuts for onshore winds in 2015, when an alliance of Liberal Democrat, Labor, and crossbench peers overturned the related clause in the energy bill.<sup>35</sup> Later on, however, the Cameron government proceeded with the cuts with secondary legislation. In early 2016, when the government introduced the subsidy cuts by ~65% both for onshore wind and solar, the Liberal Democrat peers in the House again attempted to rescind the cuts, hoping that they would gain the backing from the Labor peers as they did before.<sup>36</sup> This time, the Labor peers did not support the push by Liberal Democrats to stop the cuts for solar subsidies even though the party was critical of the subsidy cuts and considered tabling a 'regret motion' on the cuts.<sup>37</sup> It was believed that the Labor was wary of utilizing its power in the House of Lords too much after Chancellor Osborne threatened to curtail the House's power, following a humiliating pushback on his tax credit reform by the House in October 2016.<sup>38</sup>

In short, despite having nominal institutional power, the House of Lords rarely utilized this to ensure a more stable subsidy regime for the UK solar industry. By contrast, the Bundesrat enjoyed more institutional power and faced fewer restraints while wielding it. Here of course, it is essential to consider the legitimacy of the upper chambers in both countries: In Germany, the Bundesrat served as an upper chamber whose legitimate authority rested upon local administrations

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<sup>31</sup> This applies especially when legislative action is initiated in the House. If it is passed as a parliamentary act, a law can be legislated without consent from the House of Lords. See Trax 015

<sup>32</sup> Trax 015

<sup>33</sup> Even though the changes introduced by Cameron in 2011 might have undermined this ethos, see Trax 015

<sup>34</sup> Trax 015

<sup>35</sup> *Ibid.*

<sup>36</sup> *Ibid.*

<sup>37</sup> *Ibid.*

<sup>38</sup> *Ibid.*

and was an integral part of the legislative process. By tradition, the Federal government also restrained its institutional power in the Bundestag to the favor of Bundesrat in order not to undermine the culture of consensus building in German politics. In the UK, on the other hand, the legitimate authority of the House of Lords was frequently questioned due to the hereditary origins in its historical trajectory.<sup>39</sup> Probably because of this legitimacy deficit, the UK government rarely felt a need to seek compromise with the House of Lords. It did not restrain its institutional power in the House of Commons. Finally, in Germany, as the upper chamber representing local politics, the Bundesrat also provided better institutional access as the interests of the renewable energy sectors including solar were usually concentrated at a local level.

Counterfactually thinking, if the UK had had as much empowered local administrations as in Germany, the solar sector in the UK would have been likely to exploit such institutional frictions between the local and central governments to protect its interests better. There are reasons to think so, considering the past practices of the UK solar sector. As mentioned, the sector tried to lobby for moderate subsidy cuts in 2011 by contacting the Lords in the House. Additionally, after its doomed "Cut, Do not Kill" campaign failed to gain support from policy-makers in Westminster, the UK solar sector attempted to exhaust other institutional means as a last resort.

Indeed, the UK solar industry took it to court when the Cameron government decided to slash subsidies earlier than the official review time in the regulation and without sufficient consultation. The court ruled that the government's action was "awfully illegal". The Department of Energy and Climate Change (DECC), representing the government, appealed the decision, but its objection was defeated. Later, the UK Supreme Court also ruled that what the Cameron government did was illegal as it hurt the solar companies regarding industrial planning. Following this decision, many solar companies joined the tide and invited the UK government to compensate for their losses without going to court again. Yet, the records in 2016 show that the DECC paid almost \$60 million in compensation to the solar companies. During the court process, some sector representatives, including the British Photovoltaic Association, did not support resolving the issues in a confrontation with the government, arguing that this practice would undermine the trust between the parties and discourage the government from making a dedicated policy support and commitment to the solar sector in the long run. However, this incident was still instrumental in showing how the economic actors could be drawn into safeguarding their interests confrontationally when no political institutions could provide access to interest representation and mediate the process

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<sup>39</sup> Trax 016

as in Germany. Probably, due to the same reason, the potentially conflictual subsidy reduction process had a different trajectory in Germany: Even though similar lawsuit issues appeared there as well, the design of German political institutions provided more space for interest mediation and lessened the risk of confrontational policy-making in the country.

### *Electoral institutions*

Another important source of power distribution is differences in electoral institutions. Unlike federalism, the differences in electoral institutions contribute to the vertical diffusion of political power. By dividing governmental power among multiple political parties in the government, electoral institutions based on proportionality can contribute to the diffusion of political power in comparison to majoritarian electoral institutions. That's why, in the political systems based on proportional electoral institutions, political constraints are usually more commonplace in decision-making processes and policy stability is more likely.<sup>40</sup> Like federalism, this is also conditional on potential divergence between coalition government partners. The institutional design based on proportionality makes a difference only when there is a remarkable divergence in the policy positions of the coalition partners. Furthermore, the divergence here only makes a positive contribution to the interests of a renewable energy sector only if the junior coalition partner compromises the policy stance of the senior coalition partner in the direction of pro-environmentalism. In the cases in which policy stances of coalition partners are highly aligned, the institutional differences are not likely to result in any change in policy outcomes.

As the parties that comprise the coalition government in most cases, the policy stance of the center parties plays a pivotal role here. To the extent their conventional policy position is compromised in the direction of pro-environmentalism, the renewable energy sector is more likely to safeguard its interests. This is so because, for policy makers in center parties, energy transition usually harbors a conventional policy dilemma within itself, that is, the challenge of accommodating ecological and economic concerns at the same time: At least in the short-term, energy transition is a costly enterprise, and without undertaking such costs, it is hard to reap its ecological returns which usually come into fruition in the long-run. Due to their partisanship structure and centrism, center parties conventionally prioritize the affordability of public policies, including subsidies for green policies. Myopic electoral pressures often incentivize policy-makers

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<sup>40</sup> See Tsebelis, 2002

from center parties to get fixated on the short-term costs of energy transition rather than its long-term ecological returns.<sup>41</sup> This is not surprising considering that short-term costs are imminent and concentrated, thus concerning many in their electoral base including voters and businesses. In contrast, long-term ecological returns are usually spread and ambiguous, thereby being preoccupied by few.<sup>42</sup> Given this, center parties—from right or left—usually have fewer political incentives to pursue ambitious agendas in green energy transition at the expense of perceived short-term costs of such policy-making for their electoral bases.

In certain cases, changes can occur in the conventional policy positions of center parties due to electoral shifts such as the mainstreamization of green politics, which makes green investments electorally attractive despite the upfront costs as in renewable subsidies. However, in some other cases, policy-makers in center parties can also succumb to more favorable green policy-making out of necessity due to coalition agreements or distribution of power dynamics even if they do not see it as electorally profitable. That is why, if underlying electoral institutions diffuse political power along with multiple political actors that are not necessarily aligned with center parties—especially niche parties with green orientation—this can also result in further compromises for center parties to the interests of renewable energy sectors.

In the case of Germany and the UK, their differences in electoral institutions are not actually instrumental to account for the cross-case variations in the policy outcomes, due to the policy positions of junior coalition partners: While the libertarian FDP compromised the CDU/CSU's policy position on solar subsidy cutbacks in a negative direction, the Liberal Democrats compromised the Conservatives' policy position positively. That's why, the variations here are unlikely to account for the cross-case differences. However, the within-case variations in these two countries can still show that electoral institutions might account for a substantive amount of horizontal power diffusion, which enabled alternative venues of interest representation for the solar sector at different times. In Germany, the proportional electoral system usually prevented the formation of one-party governments. That is why it is possible to discern the impact of this within-case variation when we compare two successive coalition governments during the subsidy cuts: The need for dramatic subsidy cuts appeared first during the CDU/CSU and SPD coalition governments (2005-2009), and then it peaked during the ensuing CDU/CSU and FDP coalition

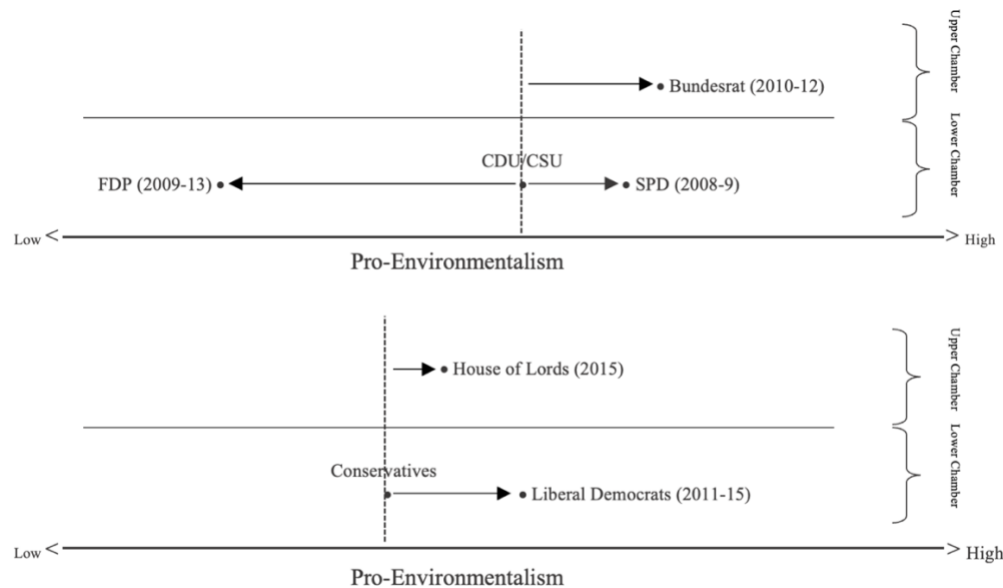
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<sup>41</sup> Trax 017

<sup>42</sup> In the mass party logics of center parties, electoral considerations of issues concerning many in the short-term usually triumph over those concerning few in the long-term, see Trax 018.

government (2009-2013). The within-case variation here, together with cross-case differences at the federal level, helps illustrate how policy constraints arising from design of political institutions can generate centrifugal forces that can benefit particularistic interests by providing an additional layer of institutional access to policy-making (see figure 1 below).

*Figure 1. Approximate policy positions of actors and associated centrifugal/centripetal forces as policy constraints at different institutional layers*



Source: Author's own compilation, see Trax 031

Compared to the first coalition government, the solar industry was subject to harsher subsidy cuts plans due to the impact of FDP as a pro-business coalition partner. Even though there were also demands for severe cuts for the solar industry in the previous government, especially from the business wing of the CDU/CSU, the SPD played a moderating impact on such plans.<sup>43</sup> As the political party that sponsored the EEG in 2000, the SPD usually demonstrated a closer stance on the solar industry than CDU/CSU. In particular, the MPs close to the solar industry, like Ulrich Kelber and Herman Scheer, played a key role in protecting the solar industry's interests.<sup>44</sup> During that time, when the pro-business fractions inside the CDU/CSU pushed the cuts to go up to 30 to 50%, a relatively solid pro-environmental fraction inside the SPD counterbalanced this.<sup>45</sup> In the

<sup>43</sup> Trax 019

<sup>44</sup> Trax 020

<sup>45</sup> Trax 021

end, the coalition government agreed on a cut of 10% to the likes of the solar sector.<sup>46</sup> Here, intra-coalition frictions considerably benefitted the interests of the solar sector. Without the opposition from the SPD, the CDU/CSU could have made a less drastic cut anyway. After all, the CDU/CSU also had their pro-environmental fractions. However, without the SPD, they may not have reached an intra-party compromise as favorable as the agreed 10% cut.

When the FDP replaced the SPD as the coalition partner, this influence disappeared to a great extent. As a center-right party, the conventional policy position of CDU/CSU was closer to the traditional business rather than the renewable energy sector. With that said, its policy position on subsidy cuts was still moderate compared to the FDP. From the beginning, the FDP was very distant from the idea of promoting renewables through heavy-handed state instruments like feed-in-tariff, though it did not have a particular animosity toward the idea of green energy transition.<sup>47</sup> Instead, the FDP advocated for abolishing renewable subsidies in the shortest possible time and using more market-oriented instruments like auctioning if there would still be a need for policy support for renewables.<sup>48</sup> That is why when FDP entered the coalition with the CDU/CSU, its net impact on the CDU/CSU was negative in terms of generosity of subsidies.

Having majoritarian electoral systems, the UK had coalition governments in a much more rarity. However, the new UK government after the 2010 elections was an exception as it was a coalition government formed between the Conservatives and Liberal Democrats. It is also possible to capture the impact of a within-case variation here, as the country's solar industry underwent subsidy cuts during the tenure of this coalition government. Both Conservatives and Liberal Democrats advocated for green ideals during the election period. In the famous words of then Prime Minister David Cameron, the new government would be “the greenest government ever”. However, soon after the new government started its job, it became clear that the Conservatives were not fully committed to promoting renewables regardless of their costs for electricity bills, which they certainly wanted to make more affordable, especially for working families in their electoral base.<sup>49</sup> As the political party which controlled the Treasury, the Conservatives were not happy about the fact that renewable subsidies were adding to the electricity bills.<sup>50</sup> In line with their fiscal conservatism and objectives to rein in government spending, the Conservative Party wanted to

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<sup>46</sup> Trax 022

<sup>47</sup> Anonymous interviewee data

<sup>48</sup> Anonymous interviewee data

<sup>49</sup> Trax 023

<sup>50</sup> Trax 024

reduce subsidy-related spending even though the state budget did not necessarily finance these subsidies. Considering right-left divisions in the British politics, to see a u turn from the ruling party in its green commitments would not be surprising. The majoritarianism of the electoral system in the country also compounded this. In the subsidy degression episode in the early 2010s, however, Liberal Democrats served as a bulwark against the Conservatives' planned policy reversals. Against the Conservatives, Liberal Democrats usually served as the coalition partner which tried to protect the interests of the renewable energy sector, including solar.

In the 2011 subsidy cuts, for instance, the opposition from Liberal Democrats was visible: When the Cameron government started to articulate its desire to slash subsidies for solar, the MPs from Liberal Democrats demonstrated their objection. Their opposition also included their members in local councils. For this specific episode of the subsidy cuts, their opposition did not make a change due to the coalition dynamics which kept Liberal Democrats submissive to the demands from the Treasury controlled by the Conservatives. However, in the following years, the Liberal Democrats were more vocal in their opposition to the subsidy cuts including both onshore wind and solar. The presence of Liberal Democrats as a policy constraint did not lead to favorable outcomes for the solar sector as in Germany. Yet, the sector was able to enjoy stronger political support during the subsidy cuts which would have been less likely without the resistance from the party. In this sense, a counterfactual comparison standard in the UK itself rather than a comparison to Germany would be more useful to comprehend the importance of Liberal Democrats as a policy constraint in preventing more severe subsidy cuts in the country.

The UK's political experience with policy support for onshore wind also corroborates this. In 2012, for instance, when Conservative Chancellor George Osborne pushed for drastic subsidy reductions for onshore wind up to 25%,<sup>51</sup> the Energy Secretary Ed Davey from the Liberal Democrats fought reductions. He suggested a moderate plan with a 10% cut. Following a compromise with the Liberal Democrats, Osborne abandoned his plans:<sup>52</sup> Osborne agreed to support Davey's 10% subsidy cut program in exchange for Liberal Democrats' support for less rigid decarbonization policies, including the support for shale gas. During the compromise, Prime Minister Cameron also played a mediating role and encouraged Osborne to concede the demands by Liberal Democrats to keep the coalition government afloat. Though this example above was not

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<sup>51</sup> Partially driven by the Tory backbenchers who did not want wind turbines in the countryside (nimbyism). Here, we see a different distributional issue. Not all things are about rising energy bills, see Trax 025

<sup>52</sup> Trax 026

specifically from the solar sector, it was instrumental in showing how Liberal Democrats acted as a political constraint and stabilized the existing subsidy regime to the interests of renewable energy sectors.

Even though many might have suspected the weight of Liberal Democrats as a junior coalition government, the abandonment of a lot of policy support for renewables following the 2015 elections—in which the Conservatives rose to power alone—showed that Liberal Democrats had been actually keeping the Conservatives in check.<sup>53</sup> Towards the end of the coalition government, the Conservative party had already made it clear that they would follow a low-cost energy transition profile if they could come to power on their own in the upcoming elections: On numerous occasions, the Conservative party expressed their concerns regarding the cost of renewable subsidies.<sup>54</sup> Following the 2015 parliamentary elections, they secured a majority to form a one-party government and indeed started to roll back some subsidy schemes offered in the previous term. Having enjoyed one-party government rule without any challenge from other political parties and local administrations, it was relatively easier for the UK government to downsize renewable subsidies: Following the Office of Budgetary Responsibility's 2015 forecasts that expenditure on renewable subsidy schemes would exceed the limit of £7.6 billion set by the DECC, the Conservative government closed the renewable obligation window early for small scale solar and onshore wind, and introduced caps for the FiT spending in the subsequent years.<sup>55</sup> Accusing their preceding coalition partner, Liberal Democrats, of causing budget overruns, the Conservatives' approach to subsidy cuts was quite hawkish, reaching up to 65%.<sup>56</sup>

## **5. A large-N approach: Evidence from OECD Countries**

While the cross-case study offers in-depth insights into how institutional arrangements mediate the influence of vested interests on public policy, I complement these findings with a large-N analysis examining how the same mechanism operates across a broader set of countries that experienced subsidy reduction episodes. The dataset that I leverage in this section brings together 104 episodes of policy-support reductions from 18 OECD countries between 2009 and 2025. I operationalize an episode as an instance in which the government attempts to reduce policy support for the PV sector. These episodes primarily involve reductions in feed-in tariffs, but they also include interventions

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<sup>53</sup> Anonymous interviewee data.

<sup>54</sup> Confounding factor: NIMBYism against onshore wind, see Trax 027

<sup>55</sup> See, "Levy Control Framework (LCF)", November 25, 2016, <https://www.gov.uk/government/collections/levy-control-framework-lcf>.

<sup>56</sup> Trax 028

that seek to decrease policy-support indirectly like taxes on solar generation or consumption. This provides a binary measure of the dependent variable. To construct an alternative, continuous measure, I also collected data on the severity of moderation. I therefore employ two different measures of the dependent variable: the occurrence of the moderation and the severity of moderation.

For the independent variable, I examine the legislative strength of upper chambers vis-à-vis lower chambers in each country. I code unicameral countries as having 0 upper-chamber veto strength, while bicameral countries receive legislative strength scores ranging from 1 to 3 based on the V-Dem data on the relative dominance of legislative bodies. As an alternative to this general measure of legislative strength, I also collected episode-specific data on whether the upper chamber could formally influence a particular support reduction—e.g., by vetoing or seeking amendment—and whether the chamber was controlled by parties outside the incumbent government. This provides an alternative way of operationalizing the independent variable.

In an appendix, I present a variety of descriptive and correlational analyses and figures examining the relationships between these variables separately. Across several specifications and levels of statistical significance, the results indicate a positive relationship. A closer examination of the outliers, however, reveals some limitations in the independent variable. Switzerland, for instance, constitutes another outlier, displaying a relatively low rate of moderation despite high legislative strength.<sup>57</sup> The institutional specifics of the Swiss case can help this pattern: All of the support reduction episodes in Switzerland were actually implemented through the executive decisions of Federal Council, over which the Council of States had no direct control. In this respect, the V-Dem measure of upper-chamber strength has a validity limitation, when applied to these particular episodes. At the same, however, the measure remains informative insofar as upper chambers may serve as informal venues for political pressure and additional layers of interest representation. This limitation is integral to the reason why I also employ an alternative, episode-specific measure of the independent variable. On the other hand, although this approach more directly captures whether an upper chamber could intervene in a particular policy episode, it is not without limitations. The United Kingdom provides an illustrative example:<sup>58</sup> The House of Lords did not force moderation in the episodes examined here despite possessing formal authority to

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<sup>57</sup> See the figure 1 in the appendix.

<sup>58</sup> See the figure 2 in the appendix.

intervene in relevant legislative changes and despite not being controlled by the governing parties. This pattern largely reflects the formal and *de facto* legislative strength—the latter being closer to what the V-Dem measure captures. By convention, the House of Lords rarely blocks major government legislative initiatives, even though it may challenge them through amendments, votes, or regret motions. As illustrated in the case studies, uncodified conventions such as the Salisbury Convention constrain the upper chamber's power in practice. Considering the respective limitations of these measures, I combine the V-Dem measure with the episode-specific measure to construct an alternative operationalization of the independent variable, by multiplying the scores from the two measures. This combined measure therefore incorporates both the broader *de facto* strength of the upper chamber and its formal capacity to intervene in a particular subsidy-reduction episode.

In the remainder of this section, I present analyses using this composite independent variable and two measures of the dependent variable explained above. The descriptive evidence presented below (figures 1-4) suggests that the relationship identified in the comparative case study is also visible across the broader set of cases: Countries with stronger upper legislation bodies are more likely to experience moderation of government attempts to reduce policy support for the PV sector. This trend is similar both for moderation instance (figures 1-2) and for cumulative moderation severity (figure 3-4). The estimated odd-ratios range from 1.2 to 7.4 on one specification and from 1.4 to 8.6 in the other, with the strongest associations appearing where the upper-chamber legislative strength is moderate to high. At these levels, the estimates are statistically significant at the 95% confidence level. The results suggest that countries with strong upper legislative bodies can be around 7 times more likely to experience moderation of reductions in policy support than countries with weak upper legislative bodies and unicameral countries.

Figure 1: Moderation rate (instance)

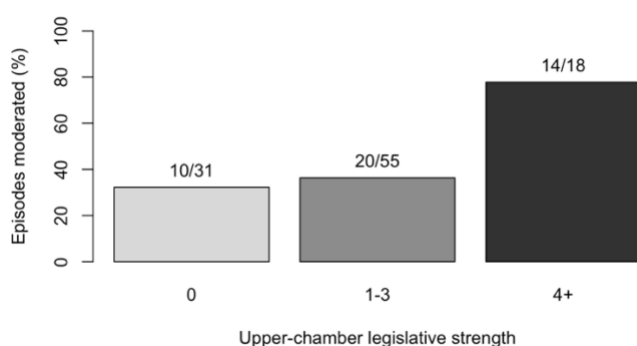


Figure 2: Odd ratios vs. *Veto=0*

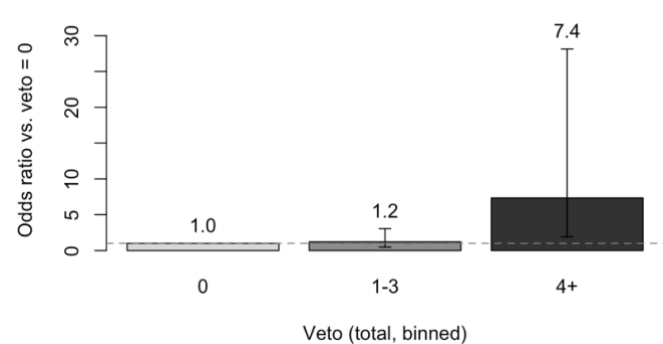


Figure 3: Moderation rate (cumulative severity)

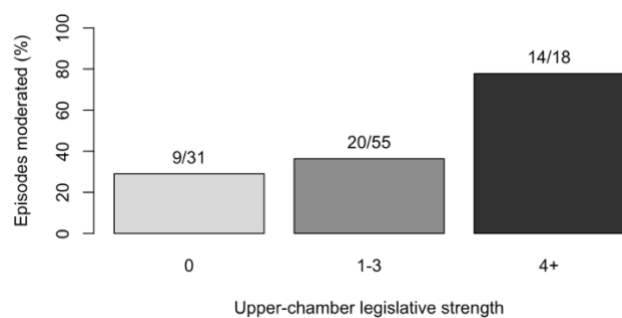
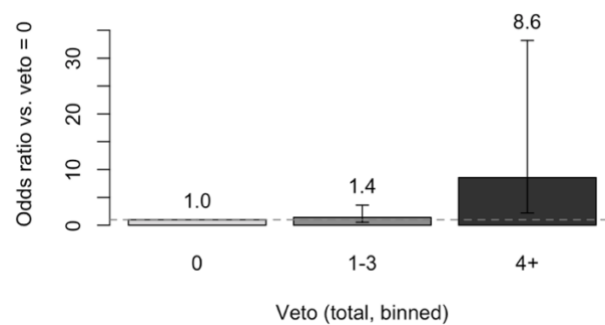


Figure 4: Odd ratios vs. *Veto*=0



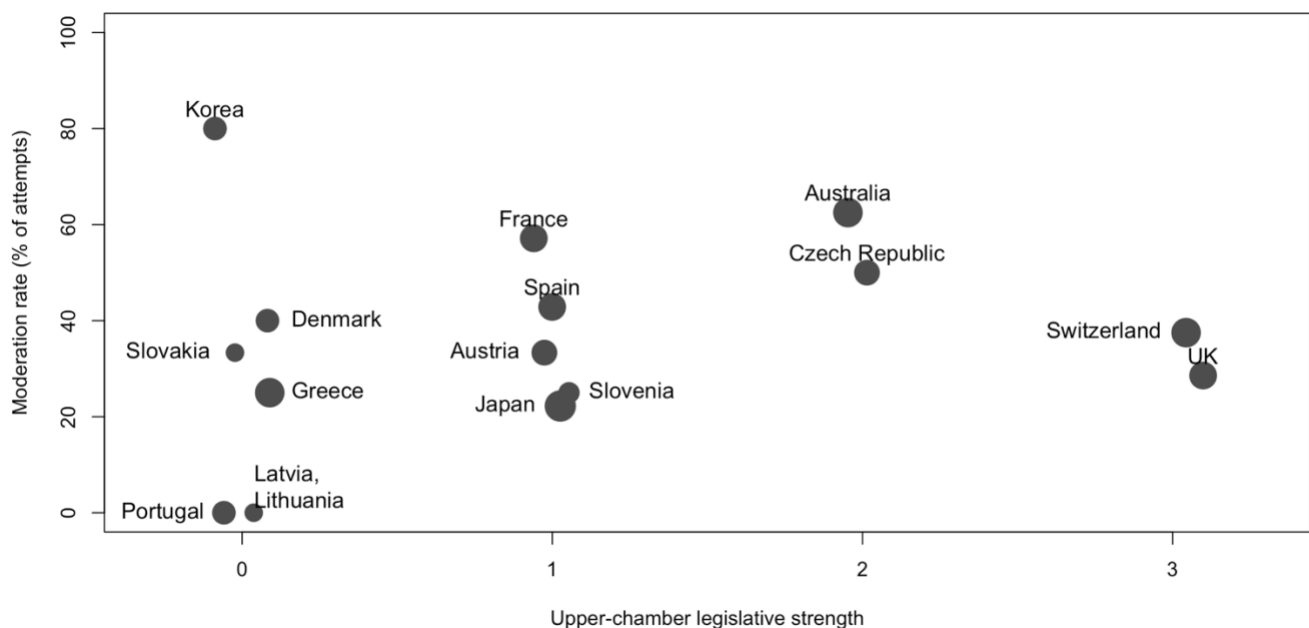
Moving forward, I also examine the relationship between upper-chamber legislative strength and the moderation of policy support cuts using a series of regression models. I also include sectoral pushback as an additional explanatory variable, considering that upper chambers generally seek amendment to a government proposals when the affected sector actively demand moderation. By alternating among the different independent and dependent variables outlined above, I estimate 3 types of models: Logit, Ordinal Logit and OLS. Because multiple support reduction episodes occur within the same countries, observations cannot be assumed to be fully independent. To mitigate within-country correlation, I therefore estimate the models with standard errors clustered at country level. Across the different model specifications, the findings indicate a similar relationship between upper chamber legislative strength and moderation, but the magnitude and statistical significance of these relationships vary.

Table 3. Impact of legislative strength on moderation

|                                                  | M1                  | M2                  | M3     |
|--------------------------------------------------|---------------------|---------------------|--------|
|                                                  | Moderation instance | Moderation severity |        |
| Legislative strength                             | 0.33***             | 0.37***             | 0.17** |
| Sectoral influence                               | 0.81*               | 0.86*               | 0.33** |
| R <sup>2</sup>                                   | 0.179               | 0.259               | 0.226  |
| N                                                | 104                 | 104                 | 104    |
| Estimator                                        | Logit               | Ordinal Logit       | OLS    |
| Co-efficients are rounded to nearest hundredths. |                     |                     |        |
| *** p<.001, ** p<.01, * p<.05, . p<.1            |                     |                     |        |
| See the appendix for detailed analysis.          |                     |                     |        |

It should be noted that the findings presented here should be seen as suggestive evidence rather than definitive evidence, providing broader correlational evidence consistent with the institutional mechanism identified through the comparative case studies. Constraints stemming from the relatively limited sample size make more extensive statistical analysis difficult, including the incorporation of a larger number of control variables, the use of conventional panel-data models,<sup>59</sup> and the estimation of country fixed effects.<sup>60</sup> The primary objective of this analysis is therefore modest: to assess whether broader correlational evidence is consistent with pattern observed in the comparative case studies (figure 5). At the same time, certain observations in the data set, the presence of South Korea as an outlier, still points to the value of further qualitative investigation into the episodes of policy-support reduction. Its distinctive pattern may reflect several alternative explanations that the quantitative analysis presented here does not directly capture. The qualitative evidence collected for individual episodes, however, makes it possible to examine some of possible explanations in greater depth. Doing so is useful not only for addressing the limitations of the large-N analysis, but also for further fleshing out the mechanisms of moderating reductions in policy support.

Figure 5: Moderation rate by legislative strength, by country



<sup>59</sup> The episode data violates panel data assumptions as their durations span multiple years. The data has also many missing years.

<sup>60</sup> Due to lacking within-case variation

First, observed moderation may be shaped by the bargaining strategies of incumbent governments: Governments can deliberately begin with relatively ambitious support-reduction proposals, anticipating that some concessions will be made during negotiations anyway, treating the initial proposal as a bargaining position. The episode-level evidence contains anecdotal examples consistent with this possibility, although it is difficult to determine how prevalent such strategic behavior is across the full sample. To the extent that it occurs, it may introduce some bias into the measurement of moderation. Regardless, this possibility highlights an important dimension that warrants consideration in the politics of retrenchment in the green energy transition.

A second consideration concerns the sequencing of policy intervention: Concessions made at an early stage—whether built-in into the initial proposal or negotiated with the affected sector after in/formal legislative consideration—may reduce the need for subsequent intervention by upper legislative chambers. Although the dataset captures the observable instances of moderation that occur during the policy process, it does not systematically track concessions that are already built into early proposals. This creates an additional measurement limitation. This may potentially reduce the demand for moderation.<sup>61</sup> More generally, the causal process underlying reductions in policy support primarily involves interaction between the government or executive and the affected sector. Upper legislative chambers become consequential as an intervening variable mainly when there exists sectoral demand. Legislative intervention should therefore not be understood as operating independently of sectoral mobilization. In the same vein, it should be also noted that magnitude of policy reduction potentially confounds ensuing episodes as radical reductions leave less space for further cut relative to gradual and mild reductions. In this sense, there potentially exists an interdependence between episodes, which the analysis here does not control for.

## **6. A Discussion: Caution against institutional determinism and addressing vested interests**

While acknowledging the impact of design of political institutions on policy making, this study also cautions against institutional determinism. Political institutions do not work in vacuum, usually accompanied by varying cultures, and associated informal rules. As studied here, the case of Bundesrat is one exemplary case for this. Even though an absolute consent from this territorial upper chamber is required to make changes in the EEG, the German government still sought consensus from the Länder. In the case of the UK, also, the Lord of Chambers did not attempt to fully confront the changes by UK government due to the conventions. In this sense, institutional

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<sup>61</sup> Indirectly, sectoral pushback relates to this. Yet, many episodes are coded as 1, with the lowest score.

determinism based on the formal rules and powers of political institutions do not necessarily give a full picture of policy-making dynamics of green energy transition.

The insights from the large-N study likewise caution against focusing too narrowly on the formal aspects of institutions, as the impact of upper-legislative bodies is not always through their formal power. Sometimes, though they do not have formal influence on policy-making, upper legislative bodies can indirectly contribute to policy supply as venue for interest representations when they enable interest groups voice their concerns better through legislative debates, motions, reports, and interpersonal relations with the executives. The data related to formal power of upper legislative bodies do not also fully capture *de facto* power dynamics underlying public policy-making, highlighting the need to thinking beyond the formal exercise of power within institutions.

This also relates to institutional cultures which seem to differ in both countries as well: The findings from both the cross-case study and the quantitative analysis are instrumental in underlining a tradeoff in institutional context. A great deal of policy-making actually take place in a grey area to which political institutions may be willing to stretch out their power, and institutional cultures can play crucial roles in both coordination and exercise of power among different political institutions. Considering that a lot depends on what happens here in this grey area, it is hard to claim that the formal power and rules of political institutions necessarily shape all the institutional dynamics of policy making. Despite generalizations in the literature, this aspect of the research encourages us to look at the specificities of individual institutional cultures to provide a comprehensive picture of public policy dynamics in a country.

To illustrate, the institutional culture in the UK is usually known to be accustomed to drastic and straightforward reform initiatives, whereas the one in Germany is usually based on adjustment-driven and slow-paced reform making.<sup>62</sup> The differences in the ways that two countries phased out their coal industries are quite illustrative here: Initially led by Thatcher government's crackdown on coal miners,<sup>63</sup> the coal's disappearance from the UK electricity generations was relatively quick, only remaining in a negligible amount when it came to 2000s.<sup>64</sup> In Germany, on the other hand, coal mining persisted over decades despite the presence of a stronger green politics.<sup>65</sup> As a result of years long negotiations and consultation with stakeholders, especially in the eastern Germany, the government finally decided to set a clear exit plan for coal mining in 2019. Yet, even in this

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<sup>62</sup> Also a useful study to review is Frank et. al., 2020.

<sup>63</sup> Davies, 2021.

<sup>64</sup> For the divergent pathways of coal mining in the two countries, see Brauers et. al., 2020.

<sup>65</sup> *Ibid.*

relatively late reform initiative, the German government set out an extended phaseout stretching up to 2038 during which it promised to make investment in the region worth 40 billion euros to ensure a fair and socially just transition in the region.<sup>66</sup> In such cross-case differences, certainly many other factors played a role such as exploration of northern oil and gas fields in the Northern Sea that could replace coal in the UK, German industry's needs for cheap electricity generated from coal, the state's capacity to compensate the losers from coal phaseout. With that said, the differences in institutional cultures to manage reform process played a role as well. The reform processes in the UK were drastic and offered less cushion for socio-economic ramifications. That's why, the UK is notoriously known for getting rid of the things, including its traditional manufacturing base and coal mining in the 1980s.<sup>67</sup> The same culture also did not work differently when the government started to slash subsidies sharply for its nascent solar industry in the early 2010s.

Regarding vested interests, an important implication of this study is also that policy-making processes that are assumed to be neutral can actually be vulnerable to the pursuit of particularistic interests depending on institutional settings. Political institutions that distribute political power are certainly more representative and inclusive as they provide alternative venues of interest representation and additional access to policy-making. However, depending on contextual differences, the same representative and inclusive institutions can turn into outlets to pursue particularistic interests at the expense of public interest. It is certainly something pleasant that these institutions facilitated the representation of the renewable energy sector's interests especially in Germany, contributing to a much-needed transition to clean energy. However, as acknowledged by many, Germany also suffered from the problem of over-subsidization: It is true that generous subsidies contributed to the country's citizen-driven energy transition, but at the same time, the subsidies also might have benefitted many people and companies—driven by purely economic interests, not necessarily related to environmental concerns—exploiting poorly designed public policies which failed to adjust subsidy amount rightly in line with market dynamics. This negative externality is worth noting if public policies are expected to advance common goals by efficiently using scarce public resources.

However it would be also unfair to say that such institutions worked only for the particularistic interests of the renewable energy sector. For decades, for instance, the same political institutions in Germany also provided alternative channels for interest representation for traditional

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<sup>66</sup> Egenter, and Wehrmann, 2019.

<sup>67</sup> Anonymous interviewees data

sectors with vested interests like coal mining and auto-making to help them secure economic privileges such as subsidies or curb bold political initiatives for emission reductions. Given this, this study should not be read as a negative caricature of subsidies given to renewables, even though it brings attention to potential inefficient policy outcomes of renewable subsidy regimes. Despite their short-term costs, the renewable subsidies have been quite instrumental not only in the generation of clean but also cheaper energy. The conception of merit-order effect is in circulation to indicate this situation as the increased supply of electricity generation from renewables lead to decline in wholesale prices of electricity in the market.<sup>68</sup> To illustrate, despite their opposition against the cost of renewable subsidies, the heavy industry in Germany benefitted from low wholesale electricity prices in the market.<sup>69</sup> The studies also show that the electricity would have been costlier for consumers if the renewables had not been introduced to the market through incentives by the government.<sup>70</sup>

Even though there are solid reasons to argue for economic viability of subsidies to renewables in the long-term projection, their efficient distribution and timing still remain as controversial issues. Here an efficient spending of public money for subsidies is not the only question, how to divvy up public support among different renewable technologies efficiently also remains as another relevant policy question: For instance, when the cost of solar subsidies went up in the early 2010s, they were not only criticized for draining public money but also for expanding at the expense of other renewable technologies such as offshore and onshore wind as the policy support for these technologies were also funded through the same source.<sup>71</sup> Thus, the policy-making issues were not limited to the conventional green-carbon divide, the distribution of public resources among the green sector was also contentious. The study here offered an institutional perspective into potential challenges that policy makers can face when they try to orchestrate an efficient subsidy regime for renewable technologies. The aim here is to offer an account of conditions under which they can be dispersed more efficiently. Understanding institutional dynamics of such a regime is certainly useful to be able to offer a steady and predictable policy support for renewable

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<sup>68</sup> See: Appunn, Kerstine, "Setting the power price: the merit order effect" *Clean Energy Wire*, January 23, 2015. <https://www.cleanenergywire.org/factsheets/setting-power-price-merit-order-effect>.

<sup>69</sup> Anonymous interviewee data.

<sup>70</sup> See, e.g., George Smeeton. "Blocking new solar farms could cost bill payers around £5bn a year", *ECIU*, September 5, 2023. <https://eciu.net/media/press-releases/2023/blocking-new-solar-farms-could-cost-bill-payers-around-5bn-a-year>, also anonymous interviewee data.

<sup>71</sup> Anonymous interviewees data

technologies or other public supported initiatives in pipeline such as hydrogen projects and carbon capture technologies without inciting public backlash.

## **7. Conclusion: tradeoffs,**

By combining two complementary research designs, this paper tried to show how political institutions and the associated diffusion of political power can mediate the way in which economic actors with organized interests can influence policy outcomes. The main argument here is that retrenchment policy dynamics largely holds in green energy transition and that political institutions capable of diffusing political power among multiple political actors can help economic actors better safeguard their interests during retrenchment periods by placing policy constraints in decision-making processes. If the political actors occupying institutions are aligned as expected, political institutions can provide additional access to policy making and alternative venues of interest representations for economic actors. The first part of the research showed this based on a comparative case study. Using the subsidy data for solar energy, the second part of the study also analyzed whether this argument could hold in a large-N analysis.

In the broader context of the literature on political institutions, this research mainly confirms the explanatory value of existing literature concerning the impacts of political institutions on policy making, while extending their application to a new issue area: renewable energy subsidies. At the same time, it cautions against institutional determinism, a point that may help reinterpret some competing explanations in the literature in an energy transition context. These theoretical contributions also carry practical implications, suggesting that policy-makers should not design long-term projection of their policies without considering the capacities of their political institutions and the broader political culture in which those institutions operate.

To illustrate, in the countries with power-diffusing institutions, equipping policy initiatives with viable exits laws or flexible adjustment instruments turns out to be of greater necessity in comparison to those with power-concentrating institutions due to reduced reform capacity. The need for designing such efficient policy instruments was visible in Germany even in the eyes of those supporting renewables in the early 2010s.<sup>72</sup> Especially in Germany, the policy-making of the existing political institutions in the country proved not to be responsive enough to the fast developments in the solar market.<sup>73</sup>

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<sup>72</sup> Anonymous interviewee data.

<sup>73</sup> Anonymous interviewees data.

The political inclusion of power-dissipating institutions usually comes at the expense of reform capacity. This is usually an institutional challenge that policy-makers have to deal with while rolling back renewable subsidies, as different from power-concentrating political institutions. Yet, it is worth noting that higher reform capacity of power concentration also risks confrontational policy-making in institutional terms. When institutional access is more limited, confrontation is more likely to occur as the actors resort to contentious politics, like protests, pursue legal challenges in the courts or even seek intervention or arbitration from a supranational body, i.e., EU. The case of the UK, on the other hand, illustrates this.

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