



Original research article

# A tale of two coal regimes: An actor-oriented analysis of destabilisation and maintenance of coal regimes in Germany and Japan

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## ABSTRACT

Phasing out coal-fired electricity is an urgent global task, critical to efforts to mitigate climate change and air pollution. Despite the growth and increasing competitiveness of renewable energy, phase-out progress is slow, with coal-fired power even reaching an all-time global high in 2021. A key factor blocking or delaying this energy transition is the active resistance of coal regime actors with vested interests. However, there is still a lack of a systemic understanding of why some actors are more influential in shaping transition processes such as changes in policies or institutions. In this article, we present a comparative case study of the political struggle around the coal policy in Germany and Japan. We use the Endowment-Practice-Institutions (EPI) framework to analyse how actors try to destabilise or maintain the institutional arrangements underpinning the coal regimes in these countries and why some are more influential in shaping the policy outcomes. Our findings show that while actors' strategies are largely determined by the socio-political context they are embedded in, there are also certain patterns and common sequences of practices. These include commissioning a study, disseminating it through various networks and social media channels, mobilising the public through demonstrations, and engaging in advocacy with the aim of increasing the political bargaining power. Our analytical framework, which can be applied to various settings, helps to understand why certain policy outcomes occur amidst efforts to spur or stall energy transitions, and why regimes are destabilised in some case – but not in others.

## 1. Introduction

Coal is the largest anthropogenic source of carbon emissions, contributing to around one third of the global temperature rise over the past century [1]. To limit global warming to 2 °C compared to pre-industrial times, 80 % of coal reserves should remain unused [2]. Yet despite the increasing number of countries pledging to reduce or stop coal combustion, global coal-fired electricity production reached an all-time high in 2021, making up more than 40 % of the growth in global CO<sub>2</sub> emissions in the same year [3]. It is thus more crucial than ever to understand how a fast and substantial decline in coal use can be achieved and what a purposeful transition resulting in coal phase-out might entail [4].

An analysis of the factors driving past coal transitions has shown the importance of market forces like increasing costs of coal production and decreasing costs of alternative energies along with concerns over health

and air pollution [5]. However, even in cases where such market dynamics were in place, it is policy actions that have determined the likelihood of coal transitions [5]. This points to the need to understand the role of policies in driving transitions away from fossil fuels [6,7]. Although the bulk of transitions literature has historically focused on innovation and technology-push policies for low-carbon transitions, a growing number of scholars are examining processes of socio-technical decline. Such work focuses on the forces that contribute to the deliberate downscaling of unsustainable technologies, substances and practices [8–10]. This literature recognises that simply supporting green technologies, such as renewable energy, may be insufficient to catalyse the shift away from fossil fuels due to the path dependency [11] and lock-in [12–14] that perpetuate socio-technical systems. Meanwhile, incumbent actors can also employ obstructive measures to block or delay transitions [15,16]. These actors usually exhibit greater lobbying power than challengers due to their financial and network resources resulting from

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decades of close ties established between bureaucracy and industry. Thus, to accelerate transitions and initiate systemic change, socio-technical regimes need to be purposefully destabilised via policy interventions [17].

Propelled by this recognition, the question of how an incumbent socio-technical regime can be destabilised or discontinued by public policies is attracting growing attention [17–20]. Of the various policy options available, scholars have emphasised instruments that seek to weaken the rules, dominant technologies and actor networks supporting socio-technical regimes [5,6,21,22]. Specific examples include carbon taxes that aim to internalise environmental costs, abolishing subsidies or R&D funding for incumbent technologies, and reconfiguring decision-making networks by removing or promoting the access of certain actors to policymaking. Among various approaches, scholars are increasingly studying phase-out policies, which deliberately aim to catalyse the gradual downscaling of a certain technology, material or energy source [8,23]. Not only are phase-out policies effective for accelerating socio-technical decline, but they also create room for innovation by directing market resources away from incumbent energies and technologies, driving the growth of more sustainable alternatives [24]. A study on German-based manufacturers [17] demonstrated that the nuclear phase-out policy enacted in 2011 was the most effective policy instrument for promoting renewable energies, even ahead of R&D support schemes.

While critical for driving low-carbon transitions, phase-out policies are politically challenging [7,25]. This is because their feasibility is frequently determined by contestations, struggles and power relations among heterogeneous actors, such as policymakers, interest groups (industry and trade associations, unions, etc.) and civil society (NGOs, citizen associations) [26]. Indeed, several studies have found interest groups' influence on energy policies to be significant, even after taking into account other predictors like international influences and macro-economic factors [27–29].

Concerning coal specifically, prior studies have focused on coalitions, actors' roles, objectives [30,31] and strategies [32–34] to influence coal policies, but important knowledge gaps remain. Although revealing insights into the influence of particular actors, the extent studies do not elucidate what makes these actors more influential than others [35]. This explanatory perspective is crucial to understand why phase-out policies are implemented in some jurisdictions and not in others [36,37]. Moreover, achieving a coal phase-out requires more than mere policy change. Due to the resistive influence and inertia created by vested interests and a wide array of material and non-material lock-in sources such as codified rules, cognitive frames, values and norms [13,26], eliminating coal-based energy systems requires broad changes to the formal and informal institutions that embed a socio-technical regime. To better understand why lock-in forces are overcome in some cases and not in others, we therefore need to look closer at the institutional contestations. Equally relevant is the question of how actors try to destabilise or maintain the existing institutional arrangements, and why some are more successful than others.

In this study we therefore analyse the processes by which different actors have sought to influence coal policy in Germany and Japan. As two advanced economies with power systems that have strongly relied on coal, each country's policies have recently started to diverge remarkably. While the German government has decided to phase out coal-based electricity generation by 2038, the Japanese government is committed to maintaining a 22 % share of coal in the electricity mix in 2030 [38]. Moreover, it has no long-term plans to completely eradicate coal from its power mix, even in 2050 [39]. These two countries are thus “deviant cases” [40]. That is, Germany is in the midst of phasing out coal power despite being the world's largest producer of lignite [41]. Japan, meanwhile, despite lacking major reserves and importing most of its fuel, is currently locked into coal [13]. To explain this counterintuitive development, we investigate each country's coal politics by addressing the following research questions:

1. How do actors seek to influence coal policy?
2. How do their practices or strategies vary in accord with differing institutional contexts and endowments they possess?
3. Why are some actors more influential than others in shaping policy outcomes?

To this end, we apply the Endowment-Practice-Institutions (EPI) framework [42] to a comparative case study on Germany and Japan. To elucidate why some actors have more influence over institutional arrangements such as government policies, this framework provides an important tool for focusing on the practices of differing actors and their salience to the institutional context. It also reveals the influence of different levels of endowments on how well these practices can be pursued. This focus on actors' practices enables us to deepen our understanding of the political struggles around coal policies—and particularly *phase-out* policies—a topic thus far receiving limited attention in the literature [18]. Insights from our investigation also shed light on the larger question of how actors try to destabilise or maintain the institutional structures underpinning the socio-technical regimes and why some are more influential in doing so.

In the next section, we provide an overview of the various theoretical frameworks used to analyse coal policies and identify the remaining gaps. We then elaborate on the EPI framework used in this study, its theoretical background and the novel insights it can provide. The third section explains the methodology and interviews. We then analyse the German and Japanese cases in the fourth and fifth sections, respectively. In the sixth section, we compare the findings from both cases, discussing common patterns and singularities in each. We then summarise the conclusions in the seventh section.

## 2. Theoretical background and the Endowment-Practice-Institutions (EPI) framework

### 2.1. An overview of the relevant theoretical approaches

Various theoretical frameworks have been used to analyse coal policies, including Triple Embeddedness framework [30,43], Varieties of Capitalism [37], Actors-Objectives-Context framework [44] and Strategic Action Fields [33]. In this section, we firstly review each and elucidate any aspects that are lacking, implicit or not compatible for tackling the core research questions in this study. In the second part, we introduce the EPI framework and its theoretical underpinnings.

Varieties of Capitalism (VoC) distinguishes two primary types of market economies<sup>1</sup>, coordinated market economies (CMEs) and liberal market economies (LMEs), aiming to describe how institutions and organisations such as firms, state actors and unions interact within these economies [37]. Prior research has used the framework in comparative studies, for instance, on the deployment of low-carbon technologies [45,46] and the phase-out of coal power across Europe [37]. With its focus on countries' macropolitical-economic structures, naturally, the approach is agnostic on the country-level dynamics within which relevant actors exert an influence on policies through various strategies. The Triple Embeddedness framework, the Actors-Objectives-Context (AOC) framework and the Strategic Action Fields framework, respectively, address these political dynamics by focusing on varying aspects of

<sup>1</sup> The two types are referred to as Coordinated Market Economies (CMEs) and Liberal Market Economies (LMEs). In CMEs, markets are regulated extensively by formal institutions. CMEs have a cooperative infrastructure which enables information-sharing, reaching joint agreements, deliberation, monitoring and sanctioning among employees, firms and the government. In LMEs, coordination takes place mainly by market mechanisms. This makes it less feasible for labour and governments to reach agreements by collective bargaining. In LMEs, trade unions and employment protection are relatively weaker than CMEs [37].

relevant actors. The focus of the Triple Embeddedness approach remains within the role of industry regimes and firm-industry relations [30,43]. The AOC framework [44] focuses on the interaction of three key elements to explain policy outcomes: politically and societally relevant actors, their objectives, and the context in which the decisions are made. We share the view about the importance of context. However, although actors constitute the unit of analysis in these frameworks, there is no explicit focus or theorization concerning their activities or practices and why some may have more leverage than others.

In adopting the EPI framework, we follow the basic conception of the Strategic Action Fields framework, which emphasizes the role of political games played by the “incumbents” and “challengers”, two sets of competing actors that constantly adapt their strategies and strengthen their positions [47]. These hard-to-quantify factors, in addition to tangible factors such as resource endowments of the actors, are crucial for understanding the influence of particular incumbents and challengers in a contested policy processes. However, we argue that with strategic action, actors do not necessarily seek each other's cooperation. In other words, actors may exert their influence on institutional structures based on broader types of relations with other relevant actors, not only through “power *with*” (i.e. learning and cooperation relation), but also “power *to*” (resistance) and “power *over*” (coercion and manipulation) [48].

Another aspect where we deviate from the Strategic Action Fields framework is our conceptualization of agency. In this study, we adopt a practice-oriented approach, postulating that the skills of the actors pertain to their choice of practice (i.e. activities), which influence institutional structures and mobilisation of the relevant resource endowments required for these practices. We argue that this enables a more direct way of analysing the effect of actors' strategic actions compared to the rather abstract conceptualization around cognitive, empathetic and communicative dimensions.

## 2.2. Endowment-Practice-Institutions (EPI) framework

To address these drawbacks presented by the existing approaches, this paper employs the EPI framework [42]. While this section presents the core aspects of this framework, interested readers may refer to [42] for a complete account.

The EPI framework was developed to study the contentions of the institutional structures that govern socio-technical regimes. Institutions consist of formal and informal rules that define actors' behaviours and interactions [49]. Formal institutions include regulatory structures, such as policies and laws. Informal institutions consist of cognitive and normative structures [50] which include shared belief systems, expectations, cultural frames, values and norms. Together, formal and informal institutions provide relatively stable structures that socio-technical regimes draw their legitimacy from. Therefore, changes in institutions are crucial for the destabilisation of incumbent regimes, such as the coal and electric power industry.

Destabilisation of regimes has recently gained traction as a topic in transition studies (e.g. [17,34,51]). Some of these adopt a macroscopic lens and analyse historical cases [19,52], policy-mixes [6] and socio-economic factors [53] that have contributed to destabilisation. For example, the latter study on 23 energy and 11 transport related transitions revealed that subsidy removal, carbon pricing, privatization and liberalizations were the most prominent factors that induced socio-technical destabilisation in past transitions. While such studies are valuable for understanding the conditions pertinent for destabilisation, it remains largely unknown what activities or practices are required for these conditions to occur, and how these actions change with the context. To overcome such limitations, the EPI framework focuses on

actors' practices (i.e. activities), their resource endowments and the institutional structures, the latter being both a target for actors to influence and also a factor conditioning the relevance of practices and distribution of resources among the actors.

Phasing out coal requires substantial changes in both formal and informal institutions. While challengers, seeking to bring an end to a coal regime, would try to destabilise the existing institutional structures, incumbent regime actors would actively defend or maintain the structures that benefited them [15,16]. We perceive this as an ongoing struggle, the outcome of which is primarily determined by what practices are performed by competing actors and how well they are conducted. In essence, the EPI framework aims to explain how actors shape institutional structures such as policy processes, and to elucidate why some are more successful in doing so.

The EPI framework draws primarily on insights from New Institutionalism, particularly from the field of “institutional work”, which concerns the goal-oriented and strategic practices that actors pursue to create, maintain or disrupt institutions [54,55]. The EPI framework conceives the ability of actors to shape institutions to depend on the effectiveness of their institutional work practices, which in turn, is determined by the following factors: (i) the salience of the practices performed for a given institutional setting; (ii) the competence by which these practices are performed; and (iii) contingencies and the time order by which these practices are performed [42].

The rest of the section provides a brief explanation of these constructs. We conceive the salience of actors' practices to be contingent on (i) actors' objectives regarding institutional outcomes; (ii) the types of institutions targeted; (iii) the nature of the issues contested; and (iv) the broader institutional or political setting, such as political opportunity structures that actors are embedded in. Actors' objectives can be broadly defined as creating, maintaining or disrupting institutions. For example, we expect the incumbent actors of a coal regime to primarily seek to maintain or repair the institutional structures that benefit them. In contrast, the challengers (i.e. anti-coal or phase-out actors) seek to disrupt or destabilise the institutions that lay the foundation of the socio-technical regimes. Hence, practices that are related to maintaining of institutions [54] can be more salient for the institutional work of incumbents and practices related to disrupting for the challengers. On a similar note, the type of institutions targeted (i.e. regulative, cognitive or normative) is another factor determining the salience of instructional work. Finally, contextual factors such as the characteristics of the issue contested and political opportunity structures also determine what practices gain relevance. For example, a debate around introducing a smoking ban in public places may mainly revolve around normative aspects such as a value-based contestation between protecting the health of non-smokers versus conserving the rights and freedom of individuals. On the other hand, contestations around energy transitions have many different facets, including economic factors, employment, infrastructure, assets and technologies. Therefore, a wider variety of practices might be relevant. Characteristics of the political system may also affect the salience of practices. For instance, in open political systems where civil society and a larger number of actor groups have access to policymaking, institutional work on normative aspects can be more relevant. Meanwhile, in closed and technocratic systems, the cognitive pillar may gain more importance.

In addition to the salience of a practice (i.e. what practice is conducted), the EPI framework argues that *how* these practices are conducted also matters. While there could be various factors determining the degree of competence with which a practice is conducted, the possession and skilful mobilisation of the endowments required for that practice is of major importance. Based on prior work [56,57], we consider actors' networks, material and non-material resources and

discursive skills as primary blocks for institutional work practices, with some practices requiring more endowments than others. Actors' network resources denote the ties and proximity to actors who are crucial for influencing policymaking [58,59]. While material resources include financial assets and physical or technological artefacts, non-material resources comprise political and judicial expertise including the conflict resource which indicates the capability of creating electoral pressure on politicians seeking votes [60]. While the salience and degree of competence embedded into a practice will determine its effectiveness, the institutional work of actors often comprises of multiple practices that may either be conducted sequentially or simultaneously. Therefore, the overall impact of the institutional work ultimately depends on the aggregate effect of the practices, which can be synergistic or antagonistic in nature, depending on the temporal sequence and the contingencies between these practices. For example, Pelzer et al. [61] argued that Uber failed to change the Dutch taxi law by launching all its activities simultaneously. Uber thus failed to adopt a strategy that would have enabled a gradual build-up of its activities. This could have involved, for instance, targeting normative and cognitive institutions to create moral legitimacy before trying to change the regulative institutions.

### 3. Methods

Our study draws primarily on data collected via semi-structured interviews. These targeted the key actors playing an active role in the coal phase-out debate in our two cases. Going beyond a descriptive account of the actors' practices, the interviews provided an opportunity to acquire deeper insights into how the actors try to influence institutional arrangements, the nature of their strategies, and why they pursue certain practices. In line with the concept of institutional work [54], in this study we consider 'practices' as strategic actions taken by the actors to shape institutional structures (i.e. creating, maintaining or disrupting formal or informal institutions). With 'strategy', we refer to the choice of practices, their timing and the way they are conducted.

When selecting interview respondents, in the German case we mostly targeted the actors that attended the Coal Commission. In the Japanese case, we targeted NGOs, thinktanks and experts (i.e. energy researchers). While our German cases involved interviews with both the incumbents and challengers, in the Japanese case we focused our analysis on the actors outside the coal regime pushing for a coal phase-out (i.e. challengers). This decision thus avoids replicating previous literature, which has tended to focus on the obstructionist strategies of Japan's pro-coal actors [62–65]. Additionally, we supplement our interview data by drawing on the rich literature describing the strategies of various actors to affect the coal policy of each country.

Overall, we interviewed 18 organisations including federal and regional policy makers, trade unions, economic association, research institutions, thinktanks and environmental NGOs (Table 1). Most of the organisations interviewed for the German case took part in the Coal Commission. The interviews with German actors were held between June and August 2021 and lasted between 60 and 150 min. The interviews with the Japanese actors took place between January and April 2022 and lasted from 45 to 90 min. To ensure consistency across interviews in each country, we focused on questions related to the practices conducted, motivations for conducting these, the order in which these practices were conducted as well as what endowments were possessed or used to conduct the practices in question. In addition, we asked questions about actors' perceptions of the effectiveness of their practices, their overall influence as well as the influence of other actors.

To account for potential bias, whenever possible we have corroborated the interview information with our case knowledge and insights from grey and other scholarly literature. To preserve confidentiality, we anonymize the interviewees and their organisations with codes for each organisation that appear in Table 1.

All interviews were recorded and transcribed. During analysis, we examined their contents through the lens of the EPI framework, extracting information about the actors' practices to influence institutional structures, the resources they had and the order in which they carried out their practices. In Sections 4 and 5, we present the German and Japanese case and the findings from our interviews, respectively.

## 4. Strategies and practices influencing the coal phase-out process in Germany

### 4.1. Background

Coal has been the staple of the German electricity sector [31]. Hard coal had a significant importance for the economic and political transformation of West Germany after the Second World War [66]. Following the liberalisation of the coal market, domestic production of hard coal gradually declined. Nevertheless, production had only come to a halt after the removal of subsidies in 2007, which totalled around 300 billion euros between 1950 and 2008. The lignite production which was concentrated in East Germany had also fallen after unification [31]. Nonetheless, Germany has remained the biggest lignite producer in Europe, with the lignite industry offering relatively well-paid jobs in eastern regions which are lagging behind economically [31]. As a result, compared to the nuclear power, coal power had relatively more positive media framing and public image [67]. The coal regime has also benefited from the strong ties among industry, trade unions and government, which are typical in coordinated market economies such as Germany [37]. Despite Germany's strong environmental movement and the rapidly increasing share of renewables, due to the aforementioned reasons, coal still accounted for almost 40 % of electricity production

**Table 1**  
Overview of the organisations interviewed.

Code	Description
Germany	
1	Policy maker (Federal-level ministry)
2	Policy maker (State-level ministry)
3	Environmental NGO
4	Social Movement (Youth Climate Movement)
5	Environmental NGO
6	Research/Scientific Institution
7	Research/Scientific Institution
8	Confederation of Trade Union (Federal Office)
9	Confederation of Trade Union (Regional Office)
10	Regional network consisting of companies, Chamber of Crafts, university and municipalities
11	Federal Association of Municipal Umbrella Organisations
Japan	
12	Environmental NGO (international)
13	Environmental NGO (international)
14	Environmental NGO (international)
15	Environmental NGO
16	Environmental NGO
17	Non-profit thinktank
18	Research/Scientific Institution



until 2018.

Germany's policy process to phase out coal started with the convening of the Commission for Growth, Structural Change and Employment (also known as the "Coal Commission") by the governing coalition in 2018 [66,68]. The commission consisted of about 30 representatives from industry, the energy sector, mining regions, trade unions, environmental NGOs, scientific institutions and the parliament. Representatives from German states and federal ministries were also present in the plenary sessions [69]. In July 2020, the Coal Phase-out Act and The Structural Development Act were adopted by the Parliament. These policies stipulated the completion of a phase-out by 2038 and structural support measures totalling up to 40 billion euros.

The decision to phase-out coal in Germany, the second largest coal-producing country in EU, is a significant milestone.<sup>2</sup> However, the timeline set for 2038 along with the structural funds and compensation payments, which exceed 40 billion euros, makes it too late and too expensive (int. 3,4,5,6,7). At the same time, despite such a high cost, the amount saved in terms of health and environmental damages by phasing-out coal can far outweigh the costs [70]. For example, phase-out of coal in Ontario which represented 25 % or 7560 MW of its supply mix in 2003 was estimated to yield health and environmental benefits of \$4.4 billion per year [71,72]. Nevertheless, interviewed actors assert that the agreed timeline will prevent Germany meeting its climate goals and fulfilling the Paris Agreement. Considering the recent increase of the European carbon prices that would have made coal power uneconomical, this policy outcome can be seen as a favourable deal for the coal industry. Our analysis reveals how the political context and activities of actors contributed to this outcome.

One decisive factor was the role of the Federal Government (the Grand Coalition of Christian Democratic Union, CDU and Social Democratic Party, SPD), which from the beginning, did not put forward a clear, direct signal towards a coal phase-out. This had set the tone for the commission and the outcome of the negotiations:

*"The government did not put up a clear stance before the Coal Commission like 'We want to phase-out coal' and discuss how to do it fair and appropriate and therefore 'We want to consult to a large number of stakeholders.' This would have made it clear that even if there is no agreement, the coal phase-out will proceed. However, without this clear signal, the possibility of not reaching an agreement implied the continuation of status quo and not a plan for the coal phase-out. This has also affected the outcome, which was criticized as not ambitious enough and climate centred."*

(int. 7)

Another concern was the increased popularity of the far-right such as "Alternative für Deutschland" (AfD), especially in the coal-producing regions in Eastern Germany. It was argued that their influence could grow in the case of highly ambitious coal-phase out plans and inadequate compensations (int. 7). Given that AfD has gained votes mostly from CDU, even becoming the strongest party in some regions [31], and that SPD has been traditionally the main party defending the interests of

<sup>2</sup> During the writing of this paper in 2022, Germany has reactivated or extended the lifetime of some of its old coal plants as a temporary measure to deal with the energy crisis. However, the German Government announced that this is a temporary measure and the long-term coal phase-out plan by 2038 latest is not affected (<https://www.bundesregierung.de/breg-de/themen/klimaschutz/gasersatz-reserve-2048304>). More than a third of the electricity is still generated from coal and this decision has resulted in 13.3 % increase in coal consumption in the third quarter of 2022. (<https://www.bloomberg.com/news/articles/2022-12-22/germany-returns-to-coal-as-energy-security-trumps-climate-goals#xj4y7vzkg>) At the same time, the German cabinet has approved the earlier phase-out of coal in the western state of North Rhine-Westphalia by 2030. (<https://www.reuters.com/business/energy/germanys-cabinet-approves-accelerated-coal-exit-by-2030-western-state-2022-11-02/>)

coal [73,74], it can be claimed that both of these parties did not want to appear too much in the driving seat. Although Germany's energy policy is mainly determined at the federal level, this particular dynamic might have led the policy process to be influenced more strongly than usual by the regional interests. As put forward by the Energy Ministry of one of the coal-producing states:

*"When it comes to general energy policy, it is always the case that energy law in Germany is federal law...In coal policy it was a bit different. We had already been talking about this for a long time, and as a coal-producing state we were an important player and, together with the other coal-producing states, we were able to exert some influence on federal policy – also in the Coal Commission"*

(int.2)

#### 4.2. Strategies and practices of actors

The disproportionate influence of coal-producing regions may have not only resulted from the particular political and institutional context. It may also have resulted from a series of strategic actions taken by state and private actors to safeguard their interests, which was to acquire more funds and investments for their region in exchange for a coal phase-out. Evidence to this is the following statement by an interviewee representing the Ministry of Economy, Labour and Energy in one of the coal states: *"The main position was we [the coal states] all knew that there is no future, there is an end date for lignite, and the goal was to have this exit paid as well as possible"* (int. 2). Another critical element worth mentioning is that this objective remained above the party politic as the common interest of the coal states (int. 2). With respect to the specific practices of the actors, some members of the commission had already made a firm stance to set the terms and conditions from the beginning: *"[I]f you look at the work of the Coal Commission itself, they very quickly acquitted themselves of the Federal Government and also very quickly made it clear: 'You may be present, you may perhaps say something, but otherwise we decide ourselves, and we ask the question and you answer the question, not the other way round'"* (int. 1).

Notably, the official name of the Coal Commission, "Commission on Growth, Structural Change and Employment", does not contain the word coal at all. This is more than a symbolic move, as it shifts the focus from coal to socio-economic issues. Framing it as a commission on growth and employment also creates the expectation that the outcome delivered would be in line with these objectives. Furthermore, the actors in the coal-producing regions in East Germany have already been prepared to hold talks and negotiations about such a transformation long before the start of the policy process. As explained a respondent from the trade union (int. 9):

*"We have been holding a Lusatia conference once a year for 15 years and the experts for Lusatia and for structural change were also present at this Lusatia conference. And it was also clear to us long beforehand that at some point we would be phasing out coal and that we would have to think about it. And accordingly, we did this long beforehand and organised the Lusatia conferences, expert discussions on how to shape this process."*

In addition to holding expert conferences, incumbent actors worked with local universities, commissioned studies, organised demonstrations and utilised the heightened media attention in the region to express their interests to the wider public and policy makers. According to an incumbent actor from the trade unions, the main message conveyed was that there is need for a socio-ecological transition which should benefit not only the environment, but also the people in the region (int. 8). Hence, the coal phase-out should be done in a "socially acceptable way", without "rushing". Otherwise, the communities would not be on board, since they were already rather sceptical about leaving coal and many people were concerned about being abandoned, which would only exacerbate the growing populism and far-right movements in the region (int. 9). This concern was raised especially by senior employees in the

coal industry who were faced with a need to leave their relatively well-paid jobs, thereby missing the benefit of a long-term transformation of the region (int. 10).

Potentially negative socio-economic consequences and the risk of increased unemployment were closely tied with the coal phase-out in the argumentation of the actors in the coal regions. Building on the fact that these regions are already economically behind the rest of Germany and that the coal industry offers rather well-paid jobs, representatives of trade unions and Chambers of Commerce argued that leaving coal too soon, without sufficient economic measures in place, would affect not only the 20,000 employees in this sector, but also the larger economy (int. 8,9,10).

These actors also tried to back this rhetoric about economic repercussions by leveraging scientific studies, using these as a fuel for demonstrations. The latter was highly instrumental for visibility and for ensuring that the people affected by the decisions about the coal sector were noticed (int. 9). Those demonstrations were also timed strategically. Not only were they held each time the Coal Commission met, but their timing also sometimes sought to counteract the demonstrations organised by environmental NGOs.

*“[W]hen we know that Greenpeace is demonstrating somewhere, we also demonstrate there. Just to make it clear that there are not only the Greenpeace people who want to get out of coal immediately and who don't care about anything – who above all don't care about the people. But there are also those who do care about the people. So I would say that there is a bit of a competitive spirit, and when they are there, you have to organise something yourself, if in doubt, so that you are noticed.”*

(int. 9)

As a result, actors in the coal-producing states managed to orient the phase-out debate around the region and build a narrative extending beyond the abolishment of coal per se, contending that if this issue was not resolved or managed carefully, it would have far reaching social and economic consequences. Furthermore, they managed to amplify their message to policymakers through media and large demonstrations. The strategic importance of this is described by an incumbent as follows: *“Even though arguments and scientific facts are important, public sentiment and media have larger influence on the decision of politicians. And in case of doubt, the pure argument takes a back seat, which is why I believe that the influence of our scientific expertise and the arguments we present is certainly great, but the influence of demonstrations and the media is definitely greater.”* (int. 9).

Similar to the incumbent actors, the challengers advocating for an earlier phase-out also organised large demonstrations and were active in media, especially in social media. Consisting of mostly think-tanks, NGOs and research institutions, these coal phase-out advocates characterise the relatively strong environmental movement in Germany as well as the historically established presence of non-government and environmental research actors therein. In this context, some NGOs commonly commission studies to specialist research institutions. However, even in cases where the research institutions and environmental NGOs are not in official collaboration, they still have a symbiotic relationship. The former provides the “credible” knowledge and “evidence” or, in the words of an interviewee from a research institution, the “intellectual munitions” (int. 7) that the latter needs to justify and use for its activism. And in return, the research institutions and scientific bodies benefit from the larger visibility and recognition thanks to the wider reach of NGOs.

Scientific studies and reports were not only utilised for NGO activities, but they were also cited and taken up by the Federal Constitutional Court. For instance, respondents described how Germany's court had referred to a study prescribing a carbon budget to rule that the German Climate Protection Act is insufficient and that it shifts the burden to the next generations (int. 7). On that note, scientific studies and technical expertise can also be utilised for litigation (i.e. filing lawsuits), which is gaining increasing importance as a strategy among the environmental

NGOs in Germany. A further strategy pursued by the challengers was to conduct litigation and mass demonstrations together, as they are seen as complementary practices (int. 3). According to a leading figure of one of the pro-phase-out social movements, not only are lawsuits potentially effective at influencing the policymaking process, but large demonstrations themselves may also affect the court rulings: *“Shockingly, I would say, in the last debate, it is probably almost court rulings that seem to be able to generate the greatest decision-making pressure somehow, which we have seen with the court ruling on the climate lawsuit in Germany, but also in Holland, (...) so to speak, court rulings are shockingly important. (...) I am very sure that the climate lawsuit would not have been decided before the Federal Constitutional Court in the way it has now been if there had not been such mass protests and the change in social mood three years before.”* (int. 4).

Even when a lawsuit is lost, such tactics can still succeed in triggering a policy revision, delaying the construction of an industrial plant or drawing public attention to the topic (int. 3). Furthermore, some research institutions in Germany regularly collaborate or receive commissions to conduct studies for government bodies, including coal-related issues (int. 1). Anti-coal challengers seek to leverage such work as a lobbying strategy for potentially influencing policy decisions (int. 6).

Concerning different forms of strategies such as lobbying, two types of actions consisting of “inside” and “outside” lobbying can be distinguished. While outside lobbying aims to put pressure on policymakers through media and public mobilisation, inside lobbying works through personal relations and persuasion [75]. Indeed, almost all actors we interviewed conducted some form of inside and outside work, for instance, through informal exchange with politicians or by involvement in media campaigns (see Fig. 1). However, just as the type of evidence and the way and to whom it is communicated matters, the effectiveness of informal exchange with policymakers also depends on who the contact is and what kind of personal relations and level of trust is established. Evidence from interviews suggests that incumbents, mostly the representatives of the coal industry and its employees and the coal-producing states, have better connections than the challengers. According to one of the NGOs interviewed (int. 3): *“industry has their man inside the ministry and we don't and the government does not even ask us about certain legal provisions.”* This might also explain the reason why none of the NGOs and scientific institutions we interviewed rated informal exchanges with politicians as one of the most effective forms of their activity, whereas most state and industry actors did (int. 1,2,5-8,10,11). The following account by an organisation representing the interests of employees in the coal sector reveal how informal exchanges were carried out:

*“I have to approach the ministries, and then there are no public channels. In that sense, there are only the informal ways that you talk to them and somehow invite them to a discussion where several stakeholders are present. (...) So media pressure alone is not necessarily enough to convince the reporter that this is the way it has to be. You need a certain relationship of trust between us and the person, where you say, ‘OK, this isn't the first time I've worked with you, I know that you didn't want to somehow foist something on me here that would then fall on my feet later, and we're on the same wavelength.’”*

(int. 8)

Eventually, although Germany's NGOs generally have relatively large resources and member base and despite being active in mobilising the public and using all forms of media, the lobbying capacity of environmental NGOs in Germany may still not match with the actors representing the interests in coal-producing regions. However, this does not mean that they had no influence on the process. Considering that coal phase-out was a “devil's word” (int. 1) and that nobody wanted to talk about it five years ago, setting a definite timeline for the phase-out can be seen as an important achievement. In fact, by bringing coal phase-out to the policy agenda and leading the formation of the Coal Commission,

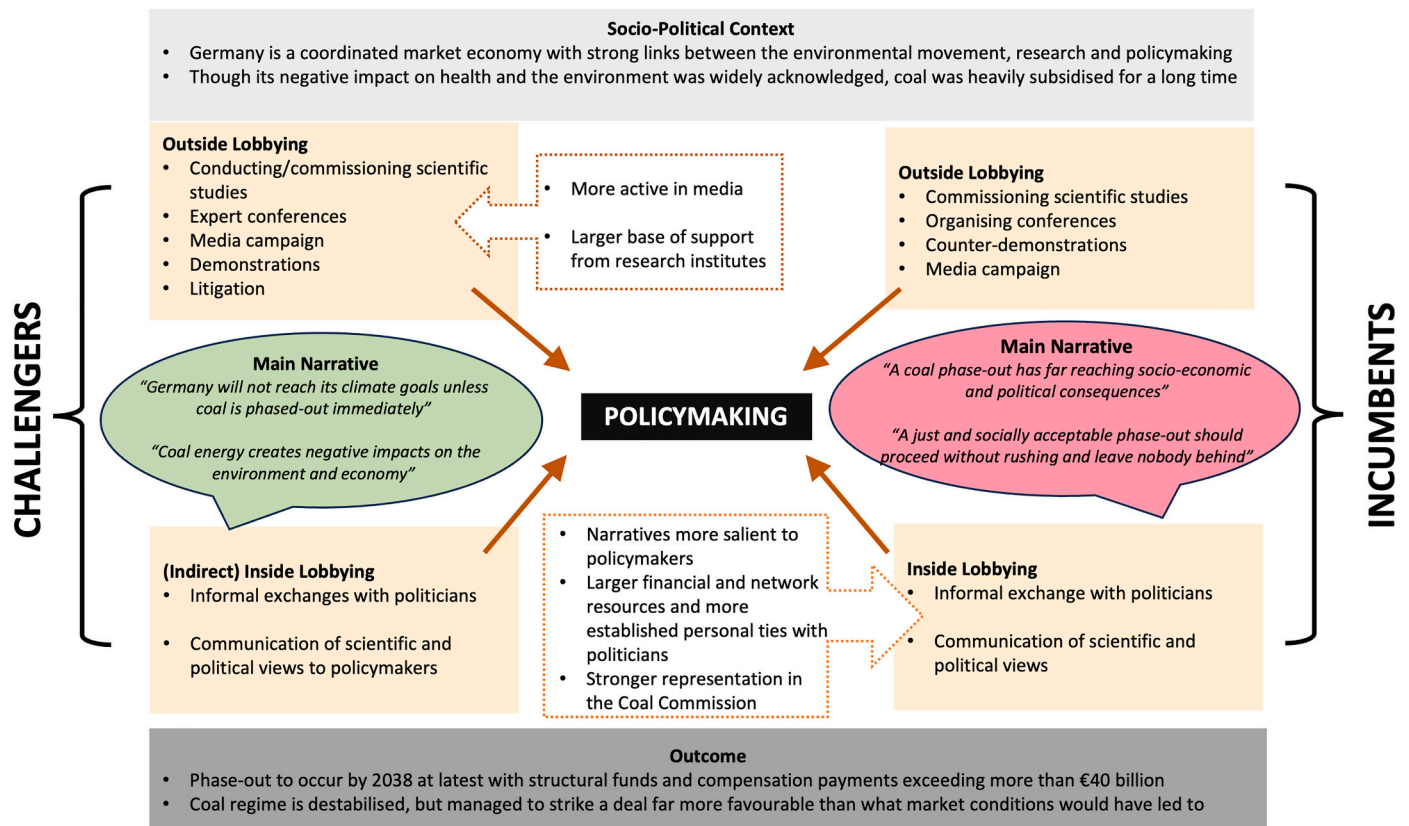


Fig. 1. The German case: an overview of the socio-political context, actors' practices and policy outcome.

the challengers have effectively contributed to the destabilisation of the coal regime. However, their superiority in outside lobbying did not seem to have the same influence as the inside lobbying of incumbents when it comes to policy formulation and law-making stage, which is likely to have involved more encounters of informal talks and exchanges with the policymakers. As a result, the incumbents of the coal regime managed to secure a favourable exit on their terms and succeed in avoiding a sudden decline.

In the end, the so-called “Coal Commission” was a unique model for Germany as well. For many, the idea of bringing experts and stakeholders together to discuss the future of coal power was a highly ambitious goal with the low chances of reaching an agreement. However, after more than six-months of discussions, the commission adopted a report with only one opposing vote. But rather than reflecting a genuine consensus, this was ultimately a compromise aimed at buying “social peace” in order to finally bring an end to coal power in Germany (int. 6).

## 5. Strategies and practices influencing the coal policy of Japan

### 5.1. Background

Although Japan lacks any significant domestic reserves and production, coal has constituted around 30 % of the electricity mix in Japan since 2012 [76], the year following the Fukushima nuclear disaster, which triggered increased reliance on coal to replace nuclear. As the fourth largest consumer and the third biggest importer of coal in the world, government and industry actors in Japan (along with China) have also proactively financed international coal power developments [62,64]. Under the Sixth Strategic Energy Plan, the Japanese state aims to reduce coal power to 22 % by 2030 [77] from the current level of 32 % in 2021–22 [78]. This is regarded as too high for many environmental NGOs and progressive thinktanks, many of whom advocate for a coal

phase-out by 2030 in order to comply with the Paris Agreement [79]. Regardless, coal continues to feature in the technology-development strategies promoted by industry and government in pursuit of net-zero by 2050 [80].

The challengers advocating for a coal phase-out in Japan consist of NGOs, progressive thinktanks and research institutes (Table 1). These actors focus their activities on two objectives: (i) reducing the share of coal in the power mix and (ii) ending public financing for overseas coal plant developments. Although the number and size of NGOs concerned with coal and environmental issues in general are less than in Germany [81], several jointly-established networks allow Japan's NGOs to collaborate closely, the two most notable being Japan Beyond Coal and Fossil Free Japan (formerly named as No Coal Japan). While the former has a mostly domestic focus and campaigns for the domestic phase-out of coal by 2030, the latter focuses on fossil-fuel projects both at home and abroad, aiming to pressure the Japanese government, corporations and finance institutions to stop supporting such projects. Most of the organisations interviewed for the Japanese case are a member of one of these two, overlapping alliances.

In contrast to Germany, the Japanese public are not well sensitised on the issue of coal. (int. 17). For most, coal is not problematised as much as nuclear, while air pollution and health impacts caused by coal burning are seen as a thing of the past [13]. Japan's environmental NGOs also have a much weaker societal presence than in Germany and possess fewer resources overall. Moreover, the policymaking scene around energy issues in Japan resembles a closed political system, with actors from legislature, bureaucracy and industry being particularly influential [42,82]. Those actors historically supporting coal power include the ruling party (the Liberal Democratic Party), the Ministry of Economy, Trade and Industry (METI) and its inhouse Agency for Natural Resources, the Japan Business Federation (known as “Keidanren”), which has strong links to electric utilities and energy-intensive industries, regional power utilities and the Federation of Electric Power Companies



[63,64]. Meanwhile, the voice of civil society actors does not exert a strong influence on (energy) policymaking [83,84].

While these contextual factors pose a considerable limitation for the challengers in terms of political structure, some headway has been made in the past few years, especially in terms of slowing down or halting the public financing of coal power development overseas. International political circumstances, such as the increasing commitment of industrialised countries (e.g. G7) to climate change and the re-joining of the United States to the Paris Agreement, are some important landscape factors. We now analyse how Japan's challengers to the coal regime have tried to benefit from these landscape developments and leverage their influence on domestic policymaking.

## 5.2. Strategies and practices of actors

One of the most notable findings in the Japanese case is that NGOs employ a distinctly different strategy than their counterparts in Germany. Since most Japanese NGOs have few opportunities to access policymakers, especially among the ruling party, their capacity to conduct “inside lobbying” is considerably hampered (int.13). Even though some NGOs actively seek journalists to increase the media coverage of their activities or reports (int. 12), these efforts have not succeeded in arousing a sizable portion of public attention towards coal, even in the communities living nearby coal-fired power plants (int.15). Due to this particular socio-political context, challengers of the coal regime conduct an indirect form of inside lobbying, targeting international organisations and financial institutions that could potentially exert some influence on the Japanese government's decisions. Apart from being necessary, there is also a strategic side to this type of action, because the Japanese government is likely to be influenced more from outside (int. 13,14). Hence, some actors time their activities in relation to important events such as COP or G7 meetings, when the attention of the international public is heightened. This is particularly important in the Japanese context as the Japanese government is highly sensitive to its international reputation and wishes to avoid criticism at high-profile international events (int. 13). Several NGOs therefore try to leverage this opportunity “by making high ranked people talk about Japan's coal dependency” (int. 13). This is also crucial to raise the public attention, since if “*Japan is criticized at the COP, which will be in the newspaper, this will be the only time coal will be an issue in the public.*” (int. 17).

The second key target group for challengers is banks and financial institutions. Japan's major banks have long been important players in the financing of coal worldwide (int.16) [62,65,85]. As part of a recent G7 agreement, however, Japan has announced the end of public funding to unabated coal power, also stipulating this in its Sixth Strategic Energy Plan. To influence the coal positions of financial institutions, Japanese NGOs described performing various activities such as sending petitions, arranging meetings, organising demonstrations and writing letters to investors, urging them to divest from the banks or companies associated with coal finance (int. 13). But perhaps one of the most effective actions was the shareholder resolution initiated by a group of NGOs (int. 12). This was done by purchasing a sufficient number of shares so as qualify for submitting a resolution. As a result, for the first time, a climate related shareholder resolution has been filed in a major Japanese financial institution (int. 12). The importance of this action is twofold: First, even if the resolution was not passed,<sup>3</sup> the organisation in question (i.e. bank) had to respond to it. The banks and corporations were used to being quite dismissive towards inquiries from NGOs (int. 13). As mentioned earlier, most mainstream and conservative media outlets have been reluctant to report about the coal policy of particular organisations. However, if a financial institution ignores the concerns of its shareholders, then it becomes a story that attracts media's attention.

<sup>3</sup> <https://www.japantimes.co.jp/news/2020/06/25/business/corporate-business/mizuho-investors-reject-shareholder-climate-resolution/>

Secondly, the shareholder resolution turned the narrative from the climate to the financial risks posed by new investments in coal. In this way, though also protesting coal on climate and environmental grounds, Japan's challengers have strategically emphasised financial (and reputational) risks facing investors and the government as their core message (int. 12,17) [86,87]. Indeed, for some investors and media outlets, the financial and reputational risks of coal are a more compelling perspective than purely climate related arguments (int. 12).

In contrast to most NGOs, certain thinktanks and research institutions have access to policymakers and ruling party officials, including the former environment minister (int. 17). While receiving the opportunity to serve on expert advisory groups and parliamentary committees hints to a greater degree of legitimacy, this does not necessarily translate into greater political influence (int. 16, 17). According to interviews, the core activities carried out by thinktanks and research institutes include frequently publishing reports, preparing media and policy briefings and organising events where Japanese and international experts are invited. On the other hand, such actors do not have any media strategy for engaging with the public, nor are they very active in social media. Instead, most of the aforementioned information-diffusion activities target government officials, the financial sector and companies rather than the larger public. The dilemma these organisations face as a consequence of this strategy is that, as entities conducting research, they enjoy a greater degree of trust and legitimacy from decision makers than NGOs. However, this type of reputation frequently compels them, as knowledge-producing institutions, to provide objective, scientific inputs. If they end up doing advocacy work and as a result are perceived as too political, their credibility might be questioned, which would then reduce opportunities to engage with politicians (int. 18). Therefore, even though some thinktanks and research institutes may be better positioned politically than NGOs, they do not necessarily have a relatively larger influence on policymaking. Conversely, and similar to NGOs, they rate their influence on the financial sector and companies relatively more, which is not surprising given the collaboration between these institutions and other environmental NGOs.

In terms of the future outlook for Japan's coal policy, even though the government's position is not likely to change significantly over the next few years, there has been a discernible shift in the energy preferences of companies that *consume* rather than produce energy. This shift is particularly salient among globally leading companies with a high sensitivity to their international reputation or with a need to decarbonise by procuring more renewable energy in their supply chain (int. 17). The RE100 network is an excellent illustration. While this may indirectly lead to a decrease of coal use, a more important trend is that companies are becoming aware of not only financial but also reputational risks posed by coal (int. 13). It is important to mention that the prevailing discourse has also changed over the course of the last few years in favour of reducing Japan's dependence on coal power. However, current ambitions by the government and major utilities to “phase out” coal are principally centred on expediting the retirement of older and “inefficient” plants (i.e. those with boiler technology of sub-critical or lower).<sup>4</sup> Newer and more efficient plants are spared from such ambitions. Meanwhile, instead of trying to eliminate coal, the state, utilities

<sup>4</sup> Some international media sources have reported that ambitions to “phase out” coal power have emerged in Japan (e.g. <https://www.reuters.com/markets/commodities/japan-says-aims-cut-ratio-coal-power-generation-much-possible-2022-05-27/>). The ambition shared by the state and major power utilities is rather to “fade-out” or shutdown 100 inefficient (mostly old and smaller) plants by 2030 (source: p9 [https://www.enecho.meti.go.jp/en/category/others/basic\\_plan/pdf/6th\\_outline.pdf](https://www.enecho.meti.go.jp/en/category/others/basic_plan/pdf/6th_outline.pdf)). Moreover, the Japanese state's vision of a net-zero energy system for 2050, widely shared across industry, includes various references to maintaining coal, principally via carbon capture and ammonia co-firing ([https://www.meti.go.jp/english/policy/energy\\_environment/global\\_warming/ggs2050/pdf/ggs\\_full\\_en1013.pdf](https://www.meti.go.jp/english/policy/energy_environment/global_warming/ggs2050/pdf/ggs_full_en1013.pdf)).



and power-equipment manufacturers are actively seeking to *maintain* coal in Japan's future power mix by leveraging costly and emerging decarbonisation technologies, such as ammonia or biomass co-firing and carbon capture [80,88].

Overall, it can be concluded that despite the close coordination between domestic and international NGOs and thinktanks, as well as their strategic actions targeting international and financial organisations, the overall influence of Japan's challengers is considerably inferior to the lobbying power of incumbent actors such as Federation of Electric Power Companies and Utilities and the Japanese Business Federation (Keidanren), which have a long standing and established relations within the bureaucracy. Yet, activities of challengers appear to have some level of impact on the finance institutions, which is certainly also affected by the attitude of investors and international political developments. However, despite recent changes in national policies for exporting coal-fired power plants (METI 2022), not only is any destabilisation of the coal regime yet to occur, but incumbent actors have adapted to growing international pressures to reduce coal dependence and pursue carbon neutrality by strengthening engagements with “clean coal” and with new technologies such as ammonia co-firing and carbon capture (int. 17) [80,89].

## 6. Discussion

The comparison between Germany and Japan reveals notable differences (see Figs. 1 and 2), yet also some similarities with respect to the strategies and practices of actors. As a general observation, the coal regime in Germany has been destabilised and a Coal Phase-Out Act to end coal power by 2038 at the latest has entered force. Yet the incumbents have still managed to come up with an “exit” deal, which is seen by most observers as exceptionally favourable considering the

timeline of the phase-out and the amount of financial support and compensations allocated to the coal power and mining industries and the coal-producing regions. In contrast, the Japanese coal regime is still largely intact. This is despite the growing landscape pressure from international sources (e.g. G7 countries), which has influenced the government decision to end finance to unabated new coal projects. It is also despite changing market dynamics where many large companies express a preference for renewable energy – pressures that many challengers have tried to amplify [90]. Responding to this changing landscape, Japan's coal regime is focused on making rather incremental changes that seek to eliminate carbon rather than coal per se. This can be seen from ongoing efforts to promoting the development and deployment of ammonia co-firing and carbon capture technologies while disseminating a clean coal narrative to maintain the viability of coal power [64,89].

We now apply the EPI framework to interpret our findings and to explain the differing policy outcome in these two countries. We first start by focusing on the socio-political context (i.e. the constellation of formal and informal institutions) to understand what practices are viable for different actor groups and why some may have better access to particular types of endowments (resources) that these practices require. Based on that, we then assess the strategies and effectiveness of their institutional work and explain why and how certain actor groups are more influential in shaping policies than others.

To begin with, there are some notable differences in the contextual factors between Germany and Japan. The environmental movement in Germany has a long history that dates back to the anti-nuclear movement in the 1970s. Environmental organisations and environmental research institutions were established earlier than in most countries. In fact, the first study about “Energiewende” was conducted by Öko-Institut more than 40 years ago. Moreover, already in the 1970s, the potential consequences of coal for the climate were discussed in the

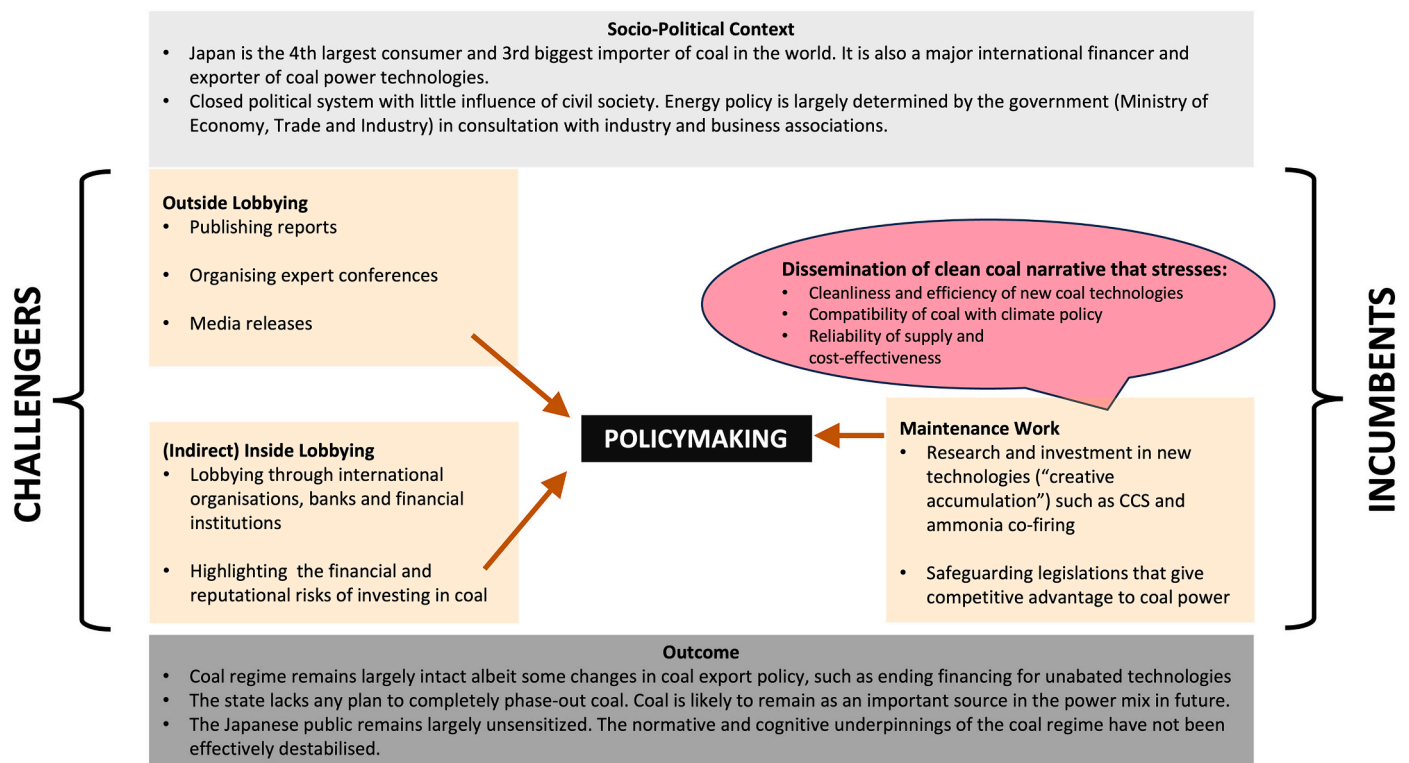


Fig. 2. The Japanese case: an overview of the socio-political context, actors' practices and policy outcome.

German Parliament [74]. Over the years, the economic topics surrounding coal ceded to environmental concerns, namely air pollution and later to concerns about climate change. Even though coal remained heavily subsidized from the 1970s to the 2000s, the framing in the political debate changed from coal being a driver of national wealth to a problem for the climate [74]. Hence, in contrast to Japan where the link between coal power and climate change is not problematised by most in the public and faith in anti-pollution technologies is strong [13], in Germany the normative and cognitive institutions surrounding coal have been challenged and largely disrupted for at least a few decades [91]. Furthermore, the environmental organisations in Germany also have larger resources and membership bases than in Japan [81,92]. Japanese NGOs try to overcome this weakness by collaborating tightly with each other via networks and other international NGOs. Although this can help in mobilising financial and organisational resources, these may still not match the endowments of incumbents, especially the conflict and network resources they possess. For both type of resources, it can be argued that the contextual factors, such as the insensitivity of the general Japanese public to coal issues and the closed political system restricting the access to policy making processes, hinder the success of the actions by the challengers.

Against this backdrop, challengers of the coal regime in Japan pursue what can be considered indirect inside lobbying, mainly targeting international organisations, financial institutions and companies that may eventually influence government policies. Conversely, although they also target the general population via media or social media campaigns, the effect of these strategies in terms of mobilising a significant public mass is limited. Consequently, when targeting government and corporate actors, challengers in Japan tend to highlight the financial and reputational risks of coal power rather than its environmental impacts. Considering that government export-finance<sup>5</sup> organisations (the main funder of international coal projects) have not been required to explicitly address stranded asset risks [62], this can be seen as an effort to alter the cognitive institutions, namely the professional practices and shared understandings among financial organisations. Some of these activities might be paying dividends when considering that banks that were initially dismissive to NGOs seem to have become more responsive (int. 13). Furthermore, considering the mounting landscape pressure resulting from divestments trends among the Japanese companies involved in coal power and extraction markets overseas [65] and recent G7 agreements, it is safe to say that Japan's policy around coal technology exports is under change. Indeed, the financing of the two ongoing coal power plant projects in Bangladesh and Indonesia was recently stopped [93]. Meanwhile, government energy policy in 2022 explicitly states to refrain from supporting new projects [77]. This said, efforts to export coal technologies have not been completely abandoned, since it appears that state and private actors are now focused on exporting co-firing and carbon capture on the view that these are abated technologies [94].

Although the indirect inside lobbying might have contributed to the increasing divestment trend observed in Japan and be a wise strategy for creating impact, especially in the short term when facing inadequate sources for direct political advocacy, efforts to stir a strong anti-coal sentiment and mobilise a critical mass in the citizenry or the government have not succeeded. Our interviews and previous studies offer some insights into the reasons for this. Among the incumbents, not only is there a constant concern in industry and government about negative implications for energy security and cost competitiveness if rapidly eliminating coal from Japan's power mix, but an unwavering faith in the decarbonisation potential of technologies such as ammonia co-firing and carbon capture reduces the rationale to pursue a phase-out for climate reasons [13]. Meanwhile, many Japanese citizens are somewhat

apathetic to environmental issues, especially when it comes to paying more to purchase green electricity as a means of supporting the energy transition and pressuring utilities to increase their uptake of renewables in the liberalised market [95].

In contrast, even though carbon capture was also once considered as an essential component of clean fossil-fuel energy by Germany's Federal Ministries, including the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety and although a law allowing the subterranean storage of carbon dioxide was even passed in the Parliament in 2012, it was never put into action due to political opposition and low public support [96]. As a result, constructed and planned pilot and demonstration plants by companies such as Vattenfall and RWE were later abandoned [97]. Arguably, this was one of the critical factors that enabled the possibility of a coal phase-out in Germany. It can also be argued that had social norms and cognitive frames surrounding coal not been contested for at least two decades, carbon capture might have gained a larger political legitimacy. One can draw parallel with the German nuclear phase-out. Even though the Fukushima accident took place in Japan and was very far away from Germany, it led to the decommissioning of nuclear plants, a major policy shift that would not have happened if there were no established public opposition to nuclear energy in Germany long before the accident [98,99].

Despite the fact that civil society is stronger and has larger representation in media and in policymaking in Germany [92], this was still not sufficient for challengers of the coal regime to fully influence the policy processes concerning the coal phase-out. As a coordinated market economy, there have been strong ties among the coal industry, unions and the government [30], which is marked by the direct and indirect subsidies that were in place for decades. Hence, the coal industry, unions, and coal states were in a more powerful position for inside lobbying than the challengers. As a result, coal interest groups managed to keep their privileged position and strike a deal that is economically far more favourable than the situation they would have faced if left to market conditions, considering the increasing European carbon prices. This shows that in addition to the choice of institutional work practices, the way in which they were performed mattered. An example to that is how the incumbent actors skilfully used the narrative of a "just transition" to shift the focus away from environmental and climate protection to socio-economic and political consequences, including the risk of growing inequalities [100] that an early coal phase-out would risk provoking. Amidst such a framing, it is easy to see how unemployment in mining regions and the growing popularity of the far-right became issues that were more salient to policymakers, at least in the short term.

Despite the aforementioned differences in the socio-political context and the strategies of actors between Germany and Japan, some common patterns can be observed in both countries regarding the type of activities and the order by which they were conducted by various organisations. The most notable sequence of action is the publishing or commissioning of a study, disseminating it by a media campaign and/or through a conference (which in some cases were followed by demonstrations), political campaigning and then reaching out to influential decision makers. A somewhat similar but less practiced sequence is the knowledge generation and the subsequent act of litigation and demonstration. These patterns largely result from the close ties between research institutions or thinktanks and environmental NGOs. In both countries, such partnerships resembling a symbiotic relationship exist in which the NGOs use scientific findings to legitimize their actions and in return the research institutions benefit from the wider reach of NGOs in dissemination of their work, especially to the larger public. This type of strategy eliminates the need for research institutions to engage directly with political activism, which can ultimately undermine their perceived "credibility" and "objectivity".

Furthermore, the political action centred around scientific studies and knowledge seem to be a common theme in both countries. However, even though research and evidence are seen as basis to change politicians and corporations' political stance (int. 17), policymaking can

<sup>5</sup> In the Japanese case, our use of "export" refers not to the raw fuel per se but to the international provision of coal-related infrastructure, technology and financing to other countries.

rarely be “evidence-based” but, at best, “evidence-informed” [101]. This means that while scientific evidence might be necessary, it is often times insufficient on its own to change government and company practices [75,102]. Hence, NGOs can play a crucial role in translating scientific findings to larger masses to alter social norms and commonly held beliefs, thereby initiating a political mobilisation. In most cases, this may have much more impact on policymaking than the scientific evidence itself. As discussed in the Japanese case, challengers sought this effect mainly through financial institutions and less so via the public due to resource and contextual constraints.

Findings from our empirical cases should be evaluated also with the limitations of this study in mind. Despite our best efforts, we did not manage to interview some important actors from the coal industry. This was purposeful in the Japanese case, since there was already extensive literature on the actions of the incumbent actors in Japan that we duly integrated into our analysis. While regime actors were somewhat underrepresented in our sample for the German case, our interviews with trade unions and coal-producing states have already revealed important and detailed insights into the practices and strategies of incumbent actors.

## 7. Conclusion

Our analysis uncovers how actors seek to influence coal policy in Germany and Japan and how a closer investigation of the type and effectiveness of their activities contribute to a more nuanced understanding of the policy outcome in these countries. The main rationale of our focus on Germany and Japan is the fact that both countries represent atypical cases at first sight. Even though Germany still strongly relies on coal energy (whose share of national power generation temporarily spiked to 30 % in 2022) and has been one of the major fuel producers in Europe, the momentum is set to phase out coal within the next fifteen years. Japan, on the other hand, obtains a similar amount of its power generation from coal to Germany but possesses no significant domestic reserves or production to build an employment-based rationale for keeping coal in the energy mix. Nonetheless, state and industry actors are committed to using “abated” coal and continue to maintain the view that coal is compatible with decarbonisation objectives [80]. In order to explain this divergent policy outcome, we studied the role of key actors and their activities based on the Endowment-Practice-Institutions framework [42]. According to the EPI framework, actors' influence on institutional structures such as policies is a result of the effectiveness of their institutional work practices. These in turn are determined by factors such as the salience of those practices to the given socio-political context and the mobilisation of resources required for those practices. Furthermore, as we argued, the sequence by which the activities are conducted is also pivotal.

Our findings indicate that most of the actors, regardless of their type and resources, sought to pursue various forms of institutional work practices. Notable examples include informal exchanges with politicians, communication of scientific or political expertise to policymakers, leverage of conventional and social media as well as conducting, financing or reporting studies and organising expert conferences and demonstrations. Regardless of their salience, the availability of the resources required for these practices and the characteristics of the socio-political context influence their effectiveness and hence the impact that actors are able to exert on the policy outcome.

There are number of aspects that stood out as to why some actors have more influence than the others. Compared to Japan, the environmental NGOs in Germany not only have larger financial and human resources, they also have better representation in the media and wider access to policymakers within the governing coalitions. In addition, the problematisation and delegitimisation of coal in Germany has been ongoing for at least the last two decades. As a result, the actors challenging the coal regime and advocating phase-out were much more successful in bringing the issue to the policy agenda than their

counterparts in Japan. However, the influence of challengers in Germany has diminished relative to those of coal interest groups in the policy formulation stage, where the terms and conditions for the phase-out were determined. This can be attributed to the fact that the interest groups have more financial assets and network resources and thus are better positioned for inside lobbying. The coal states were also reported to get involved in the legislative process more intensively than their participation in the Federal Council while their approval for the coal phase-out plan was sought by the Federal Government [103]. As a result, the coal industry, unions and the coal-producing states exerted a higher influence when it came to the formulation of coal exit laws.

As a consequence of low levels of public opposition towards coal, inadequate resources, limited coverage by conventional media and restricted access to formal policymaking, Japan's environmental NGOs and challengers tend to target international companies and financial institutions as part of their indirect inside lobbying. This strategy may be pertinent when considering the limited influence of civil society in the Japanese political context and the tendency of successive Japanese governments to be sensitive to outside influences from the international scene. However, it is unlikely that this indirect inside lobbying can overcome the vested interests and the lobbying power of the incumbents, who have larger financial and organisational resources and more direct ties to high-ranked government officials. As a result of the weaker outside lobbying by the challengers, the cognitive and normative institutions surrounding coal are not effectively destabilised. Furthermore, their attempts to stir an anti-coal narrative in the government or public are hampered by the incumbents' clean coal narrative and promotion of abatement technologies, which shows some similarities with the narratives and rebranding efforts of coal as clean and modern in Poland [104]. Other factors weakening the challengers' efforts include the tendency for public interest in energy issues to focus on nuclear or bolstering energy security [13] and the lack of willingness by citizens to prioritise carbon-free electricity when choosing utilities [95].

The following inferences can be drawn from these findings. First, actors' strategies of institutional work are largely determined by the socio-political context in which they are embedded in. Second, the effectiveness of some form of institutional work practices may vary with respect to different stages of the policy processes. Third, despite the contextual differences, there may be some common forms of practices and sequences in which they are conducted. In our two empirical cases, the most notable example was firstly commissioning or publishing a study, then disseminating it through media or expert conferences, then following this by demonstrations and political campaigns to increase the bargaining power. Further studies could take a closer look into the dynamics of such patterns and how exactly they are planned and orchestrated.

In addition to uncovering the institutional contestation shaping the outcome of coal policies in Germany and Japan, our study also makes several contributions to transition studies and energy policy literature. First, our study uncovers the political struggle around coal power and provides a detailed account of the strategies and practices actors perform to influence the nature of relevant policies. Second, by applying the EPI framework to analyse how actors shape institutional structures, we shed light on the micro foundations of regime maintenance and destabilisation. Third, our analysis also provides explanatory insights into why actors adopt certain strategies, how they perform them and why some strategies lead to more success than others. Therefore, it can contribute to enriching our understanding of why, for example, low-carbon transitions occur in some cases but not in others or why some socio-technical regimes manage to persist and why some are destabilised. These insights can also be used to devise context-specific strategies for the destabilisation of unsustainable practices or technologies.

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### Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

### Data availability

The data that has been used is confidential.

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