MASARYK UNIVERSITY

Faculty of Social Studies

Energy transition from a political science perspective: Selected cases

Habilitation Thesis

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Abstract

This habilitation thesis explores the political dimension of energy transition. It provides a theoretical reflection and novel empirical evidence on political and policy processes within five case studies, four of them conducted in the Czech Republic. The research focuses on two levels of analysis: discursive and interactional. The former refers to discursive struggles of various policy actors competing to influence the policy process, while the latter refers to interactions through which actors exchange resources and/or coordinate their actions. The thesis uses policy process theories and adjacent approaches to investigate how policy actors (1) employ discursive strategies to support or oppose the current energy regime and (2) support or oppose policy change towards decarbonization. Social network analysis is applied as an underlying meta-theoretical and methodological framework. At the discursive level, the major findings are that regime-resistance narratives are complex, centered around securitization appeals, and supported by decision-makers and resource-rich actors. At the interactional level, the Czech coal policy subsystem and opposition movement toward coal mining were examined. First, the policy subsystem is polarized between a major Industry Coalition supporting the interests of energy incumbents and a minor Environmental Coalition pressing for a rapid coal phase-out and decarbonization. The fragmentation of decision-makers in terms of policy beliefs and strategic use of expert information further inhibit policy change towards swift decarbonization. Second, in contrast to the not-in-my-backyard approach, the opposition movement is polycentrically organized as well as organizationally, ideologically, and spatially heterogeneous. Hence, the network embeddedness of activists is crucial for participation in the opposition. These results document how networked collective action involving both local and non-local actors, such as professional activists, affects the relations between incumbents and challengers.

The thesis concludes by arguing that there is a significant potential for integration of policy processes theories within a broader context of the study of energy transition. The former offers a wide variety of concepts and hypotheses on the meso-level processes as well as the role of agency and discourses in the power struggles over the nature and pace of energy transition. The latter provides a broader perspective on policy change including macro-structural trends as well as technological and material factors.

I would like to thank all my colleagues for their collaboration, inspiration, support, and hard work during the more than past ten years which has enabled me to pursue the research presented in this thesis.

My special thanks go to my co-authors as well as friends, students, and colleagues from the Department of International Relations and European Studies (DIRES) and the International Institute of Political Science (IIPS) of the Faculty of Social Studies, Masaryk University.

Further, I wish to thank my colleagues with whom I had the opportunity to collaborate within the Standing Group on Political Networks of the European Consortium for Political Research, POLNET school, Czech Science Foundation projects and Comparing Climate Change Policy Networks project. All these collaborations contributed significantly to my development as a researcher.

I also gratefully acknowledge the continuous support of the DIERS and IIPS as well as funding from the Grant Agency of Masaryk University and the Czech Science Foundation (projects 17–22978Y and 17-08554Y).

My thanks also belong to all the research respondents as well as to the anonymous reviewers, editors, and other colleagues who have provided valuable comments through peer-review and other feedback processes.

Finally, I am very grateful to my family and loved ones for all their support.

Table of contents

1. Introduction: Energy transition from a political science perspective

The consensus on the existence and net negative impacts of anthropogenic climate change (ACC) is overwhelming. The Intergovernmental Panel on Climate Change (IPCC) in its Fifth Assessment Report (2015) declared 95% certainty that human activities are the main driver of current climate change with impacts observed all over the globe. Likewise, several meta-analysis studies have documented that there is more than 99% consensus among the peer-reviewed literature on ACC (see Powell, 2016). ACC amplifies existing risks and creates new ones, which are unevenly distributed and generally greater for less developed societies and marginalized people (Pachauri & Meyer, 2015). The impacts range from reduction of water resources and food supplies (Misra, 2014) through increased displacement of people (Sending et al., 2020) to the disruption of entire ecosystems (Trisos et al., 2020). In contrast to another well-known global public good problem, the ozone layer depletion, ACC poses an enormously complex challenge requiring a major transformation of fundamental societal functions including energy production, housing, transportation and food production (Geels, 2002). No wonder that climate change is labeled a "wicked problem" which "cannot be solved, but must instead be re-solved and renegotiated, over and over again" (Grundmann, 2016, p. 562).

Energy transition, i.e. gradual change in the structure of primary energy supply to a new (decarbonized) energy system (Smil, 2010), is at the core of the needed transformation to achieve a carbon neutral society (Svobodova et al., 2020) since the energy industry accounts for 42% of global greenhouse gas emissions (Ritchie & Roser, 2021). Energy transition is, nevertheless, resisted by path-dependencies of an established fossil-based sociotechnical regime (Geels, 2014) and varied societal actors who profit from the current arrangement. Thus, notwithstanding the vast scientific consensus, the transition remains highly contested by a plurality of policy actors who compete over the definition of transition pathways (Dunlap & McCright, 2011; Geels, 2002; Markard et al., 2016). Since the specific transition pathways determine "winners" and "losers" or *who gets what, when, and how* (Lasswell, 1966), such transition is essentially a political process, and an efficient response to this challenge is, above all, a matter of governance. Governance is a rich plurality of informal and formal rules which regulate who can do what, how these rules can be formed and changed, and who oversees these processes involving various actors and operating across multiple scales (Ostrom, 2007). Sovacool (2011, p. 3833) offers a definition of governance applicable to the energy and climate change subsystems (cf. Ylä-Anttila et al., 2018) where it conditions "how people and institutions make and enforce decisions concerning various aspects of climate change and energy use".

Nevertheless, as Markard et al. (2016) point out, although political and policy processes are an integral part of energy transition, as well as of other sociotechnical transitions, not enough attention has been dedicated to them so far. Likewise, Cherp et al. (2018) argue that the neglected *political science* perspective is crucial for better understanding the energy transition (Markard et al., 2016; Van De Graaf & Colgan, 2016). The scope of potential contributions is wide-ranging,

covering research on how specific forms of governance facilitate and/or constrain particular transition pathways (Cherp et al., 2011; B. K. Sovacool, 2011), analyses of policy process and public policy (Ingold & Fischer, 2014; Ylä-Anttila et al., 2018; Study IV), research on social movements and community acceptance (Hess, 2019; Mey & Diesendorf, 2018; Studies III, V), studies of interest representation and mediation (Gründinger, 2017; Hendriks, 2009), analyses of discursive construction of energy transition (Isoaho & Markard, 2020; Osička et al., 2020; Studies I, II, III), and research on a just transition (McCauley & Heffron, 2018).

This thesis contributes to this effort with *five case studies* (for more information, see section 2) exploring various political processes occurring within the energy transition context at two analytical levels: (1) *discursive level* and (2) *interactional level.* The discursive level refers to patterns through which actors share understandings, and more specially policy beliefs, on particular issues, while the interactional level refers to actors actually exchanging resources and/or coordinating their actions (see Broadbent, 2016, 2017).

Public discourses (henceforth: discourses) shape political and policy processes via their substantial influence on agenda setting and framing, public opinion, and policy learning (see Leifeld, 2017). Firstly, discourses provide information on and interpretations of particular issues. Issues which gain enough attention then become part of the political agenda (Baumgartner & Jones, 1991) and policies are thus typically formulated and contested based on ideas already grounded in such discourses (Lehotský et al., 2019). Legacy media (see Studies I, II, III) and social media have a major role as visible platforms for debates where diverse policy actors struggle to determine what counts as a legitimate policy problem and response (Broadbent et al., 2016; Stoddart et al., 2021; Stoddart & Tindall, 2015a). Besides agenda setting, i.e. determining what are the recognized issues, actors attempt to promote or challenge these issues by emphasizing or suppressing specific attributes via 'interpretative schemes', i.e. 'frames' (Benford & Snow, 2000; Entman, 1993; Koopmans & Statham, 1999). Secondly, discourses also shape public opinion through activating certain constructs which then make particular interpretations of the issue more likely (see Simon & Jerit, 2007). Gamson and Modigliani (1989) demonstrated such effect in their study of framing effects on public opinion on nuclear power after the accidents at the Three Mile Island and Chernobyl power-plants. The expectation is that changes in public opinion in turn incentivize policy change (for alternative pathway, see Kingdon, 2014). Thirdly, discourses provide opportunities for signaling the policy preferences of involved actors and alterations of their policy-oriented perceptions before the policies are adopted and implemented (Leifeld, 2017). It is assumed that policy-oriented learning occurs when newly received information brings relatively persistent changes in actors' belief systems (P. A. Sabatier & Jenkins-Smith, 1993). As argued, discourses are central both for disseminating information as well as connecting information with policy problems, which implies their relevance for policy learning (see Busenberg, 2001).

Markard et al. (2021) thus conclude that various actors rely on discursive strategies to promote their preferred views on the pace and direction of the transition (see Studies I, II, III). Since

energy transition is a complex cross-sectoral process, actors typically cannot achieve their objective alone and engage in discourse coalitions (Markard et al., 2021). Discourse coalitions are groups of actors who share particular social constructs (Hajer, 1995), such as the idea that economic growth and innovation, when adequately managed, can propel environmental protection (see Jänicke, 2008). The shared social constructs and their configurations then can be conceptualized as frames (Benford & Snow, 2000; Entman, 1993), narratives (Shanahan et al., 2018) or story-lines (Markard et al., 2021).

While joint support or rejection of social constructs in public discourses links actors indirectly and can be conceptualized also in terms of similarities (the more constructs actors share, the more similar they are), *transactional interactions* such as information exchange or collaboration assume direct engagement of the actors (see Borgatti et al., 2018). Such interactions occur both at the inter-organizational, e.g. organizations exchanging information on a specific policy process (Study IV), and inter-personal, e.g. individuals engaging in local opposition (Study V), levels. The former constitutes *policy networks*, defined as enduring patterns of relationships among actors centered around particular policy problems (Borzel, 1998). Such policy networks then represent a relational component of policy subsystems, i.e. subsets of a political system defined by a particular issue area (Weible et al., 2016b), such as energy transition. The latter refers to networks emerging from micro-interactions among individuals, which facilitate or constrain, among other things, exchange of resources, recruitment, participation or trust and identity building within specific social contexts, such as opposition to coal mining.

Policy process theories (Cairney & Heikkila, 2014), and more specifically the *Advocacy Coalition Framework* (ACF), in combination with a policy networks perspective provide a wide array of assumptions and mechanisms explaining subsystem-level interactions, i.e. mostly inter-organizational. ACF assumes that processes of creation, termination or revision of public policies are negotiated and contested by various policy actors – and their advocacy coalitions – interacting mostly within the policy subsystem (P. A. Sabatier, 1998). Advocacy coalitions are defined as groups of actors who share (1) similar policy core beliefs, i.e. ideas on how the policy subsystems ought to be organized, and who engage in a (2) nontrivial degree of coordination (P. A. Sabatier & Jenkins-Smith, 1993). As argued, since actors cannot achieve their objectives on their own, they tend to collaborate with others. The prevailing patterns of relationships and belief dis/similarities determine coalition types as: adversarial, collaborative, or disconnected (see Weible et al., 2019). These subsystem properties then have important implications for policy change, including transition-related policies. In this context, Study IV (Ocelík, Svobodová, et al., 2019) shows how the adversarial nature of the Czech coal subsystem in combination with the fragmented positions of decision-making actors prevented policy change towards a decisive coal phase-out. Markard et al. (2016) accordingly argue there is a complex interdependence between policy change and sociotechnical changes arising from the importance of the distribution of and changes in policy core beliefs, resource flows, policy issues, and actor participation.

Importantly, the ongoing energy transition necessarily generates tensions and conflicts involving also *local communities* who are typically most impacted by the transition processes, whether as a result of phasing out incumbent technologies, such as coal-mining closures (see Harrahill & Douglas, 2019), or due to the introduction of transition-facilitating infrastructures, such as renewable energy sources (see Evensen et al., 2018). At the same time, although the transition policy agenda is shaped mainly at the global and national levels, its implementation, that is application of the mitigation measures, is carried out mostly locally (Svobodova et al., 2020). Thus, studies of community acceptance and local opposition make a valuable contribution to better understanding the societal and political layers of energy transition. Social movements literature (see Diani, 2015; Hess, 2018a) offers a rich tapestry of plausible explanations including an approach focused on *mobilization structures* consisting of formal organizations and *social networks* channeling resources and creating interdependencies among involved actors (see Della Porta et al., 2015). In this context, Study V (Ocelík et al., 2021), which examines opposition towards coal mining in Northern Bohemia, demonstrates the key importance of network embeddedness for differential participation in the opposition and engagement of ideologically diverse actors. Likewise, Hess (2018a) argues that incumbent organizations are being confronted by the mobilization of challengers, importantly including also social movements, whose objective is regime change. The inclusion of political contestations not bounded to policy subsystems thus seems to be a reasonable research direction and opportunity for theorization.

The overarching idea of this habilitation thesis is that energy transition is an inherently political process (see Markard et al., 2016). If this is the case, as suggested by the presented arguments, then political science is critically needed to better understand its underlying mechanisms and consequences. The thesis does not have the ambition to provide an exhaustive overview or systematic framework thereof but rather to situate the included case studies into the broader research context and highlight promising research avenues (see also 2.3 and 8).

The thesis consists of five case studies (for more details, see 2.1 and 2.3) investigating the contestation of transition processes at various levels—more specifically, foreign policy discourse (Study I), domestic media discourse (Studies II and III), domestic public policy (Study IV), and local collective action (Study V). All five studies share meta-theoretical assumptions and a general methodological framework derived from the network perspective.

The *network perspective* assumes that the social world is organized primarily relationally (Wellman & Berkowitz, 1997). Social networks are relational social structures, i.e. more or less stable patterns of relationships which emerge from actors' interactions (see Lusher et al., 2012b). More technically, networks consist of (at least one) set of nodes (such as policy actors) connected by (at least) one set of relationships (such as collaboration) (see Wasserman & Faust, 1994). Social network analysis (SNA) is then a meta-theoretical and methodological framework which allows theorizations and empirical investigations of such social structures. SNA is consistent with qualitative (Study I) (Luxton & Sbicca, 2021), quantitative (Studies IV and V), as well as mixed-methods (Studies II and III) (Domínguez & Hollstein, 2014) approaches to data generation and

analysis. While SNA assumes that actors' actions are conditioned predominantly by network structures (endogenous factors such as reciprocity), it enables to include also endogenous factors such as external relationships (e.g. geographical proximity) or individual attributes (e.g. ideological orientation). Thus, SNA provides a well-equipped framework for studying any social and policy processes involving an important relational component.

Four of the five studies are case studies of the Czech Republic (all except Study I; for more details, see 2.3), which is not only the home country of the habilitation thesis author but also the third largest consumer of brown coal (Eurostat, 2021) and the fourth most industrialized country in Europe (The World Bank, 2021b).

The Czech Republic is a post-communist country with mixed attributes of the majoritarian and consensus models of democracy (see Lijphart, 2012). The country remains a coal-dependent economy and is regularly ranked among the largest EU net exporters of electricity (Vlček, Prokopová, et al., 2019). Importantly, the sudden economic transformation in the 1990s enabled the country to achieve the EU2020 and EU2030 climate targets without major policy changes (European Environmental Agency, 2018, 2019). The Czech Republic is the third highest CO_2 emitter per capita in the EU after Luxemburg and Estonia (The World Bank, 2021a) and consistently underperforms in terms of climate change mitigation outcomes (see Burck et al., 2019). Moreover, the public opinion on climate change is more sceptical than the European average (Eurostat, 2017) and media coverage only recently ceased to represent climate scepticism (Ocelík, 2022). The energy and climate policy subsystems are contentious, influenced by the strong presence of energy incumbents, and centered around nuclear energy expansion, failed support of renewables, and issues of coal phase-out (Ocelík, Svobodová, et al., 2019; Vlček, Prokopová, et al., 2019; Wagner et al., 2020). Importantly, the issue of coal mining expansion substantially contributed to the establishment of an environmental movement in the 1990s and led to reoccurring challenger–incumbent conflicts (see Černoch, Lehotský, Ocelík, Osička, et al., 2019). The Czech Republic is a major European coal consumer, whose coal phase-out, and more generally its transition pathway, is neither specifically outlined, as is the case of Germany, nor principally contested by the government, as is the case of Poland (Černý & Ocelík, 2020; Ocelík, Svobodová, et al., 2019; Osička et al., 2020).

The thesis is organized as follows. The next section provides an overview of the presented studies examining different political and policy processes at the discursive and interactional levels of analysis, including the (2.1) bibliometric information, (2.2) authors' contributions, and (2.3) study summaries. The core of the thesis consists of five studies (3–7), which have been already published. The thesis concludes with a discussion of the main findings as well as opportunities for future research (8).

2. Overview of the studies

2.1 List of studies

The thesis consists of five original case studies, for which I was the lead author on four and the second listed author with an equal share on one (for more details, see 2.2). Four of the studies were published in Web of Science (WoS) Core Collection journals, specifically: *Energy Policy* (at time of publication, i.e. in 2014: WoS Q1 Energy & Fuels, IF = 2.575, AIS Q1), *Politics and Governance* (in 2020: WoS Q2 Political Science, IF = 1.6, AIS Q3), and two in *Energy Research & Social Science* (in 2019: WoS Q1 Environmental Studies, IF = 4.771; in 2021: WoS Q1 Environmental Studies, IF = 4.771, AIS: Q1). One of the studies is a chapter in a monograph titled the *Handbook of Anti-Environmentalism* edited by David D. Tindall, Mark Stoddart, and Riley Dunlap and published by Edward Elgar Publishing. The included studies provide insights into various political processes shaping the nature and pace of energy transition.

Study I: Ocelík, P., & Osička, J. (2014). The framing of unconventional natural gas resources in the foreign energy policy discourse of the Russian Federation. *Energy Policy*, *72*. https://doi.org/10.1016/j.enpol.2014.04.006

Funding: Grant Agency of Masaryk University (MUNI/A/0754/2012) and Ministry of Foreign Affairs of the Czech Republic (grant project 09/02/11).

Study II: Černý, O., & Ocelík, P. (2020). Incumbents' Strategies in Media Coverage: A Case of the Czech Coal Policy. *Politics and Governance*, *8*(2), 272–285. https://doi.org/10.17645/pag.v8i2.2610

Funding: Grant Agency of Masaryk University (MUNI/A/1044/2019).

Study III: Ocelík, P. (2022). Climate change scepticism in the Czech newspaper front-page coverage: A one man show. In D. B. Tindall, M. C. J. Stoddart, & R. E. Dunlap (Eds.), *Handbook of Anti-Environmentalism*. Edward Elgar, 84-106. https://doi.org/10.4337/9781839100222

Funding: Grant Agency of Masaryk University (MUNI/A/1044/2019).

Study IV: Ocelík, P., Svobodová, K., Hendrychová, M., Lehotský, L., Everingham, J.-A., Ali, S. H., Badera, J., & Lechner, A. (2019). A contested transition toward a coal-free future: Advocacy coalitions and coal policy in the Czech Republic. *Energy Research & Social Science*, *58*, 1–13. https://doi.org/10.1016/J.ERSS.2019.101283

Funding: Czech Science Foundation (Grant 17–22978Y).

Study V: Ocelík, P., Lehotský, L., & Černoch, F. (2021). Beyond our backyard: Social networks, differential participation, and local opposition to coal mining in Europe. *Energy Research & Social Science*, *72*. https://doi.org/10.1016/J.ERSS.2020.101862

Funding: Czech Science Foundation (Grant 17-08554Y).

2.2 Author's contributions

In **Study I**, the second co-author (Jan Osička) wrote most of the literature review section and provided inputs into the introduction section as well as general comments on the paper draft. My contribution (85%) involves everything else, including development of the research design, general framing of the paper, data analysis, drafting of the paper manuscript, and leading all revisions based on reviewers' and editors' comments.

In **Study II**, the first and second author contributed equally. Ondřej Černý conceived the study and general framing of the paper and led the coding of the data, while I led the data analysis, drafting of the paper manuscript as well as the revisions based on reviewers' and editors' comments. The paper re-analyzes data from a diploma thesis of Ondřej Černý (2019) titled "Limity české energetické tranzice v politické perspektivě: případ těžby uhlí", which was defended at the Department of International Relations and European Studies in 2019. This paper illustrates my ability to collaborate with graduate students on research.

I am the sole author of **Study III**. This study illustrates my ability to undertake the whole research process independently.

In **Study IV**, I am the lead author and conceived the research idea, developed the research design, conducted data analysis, drafted the paper manuscript, as well as led the revisions based on reviewers' and editors' comments. The other authors provided specific contributions with more or less equal shares. Namely, Kamila Svobodová (5%) contributed by participating on the general framing of the paper and revisions in section 6 (Discussion). Markéta Hendrychová and Lukáš Lehotský (each 5%) contributed by writing section 4 (Case description). Jo-Anne Everingham (5%) contributed inputs in section 2 (Theory) and participated on revisions thereof. Saleem Ali and Alex Lechner (each 5%) contributed inputs on questionnaire design and presentation of the results (section 5). Lastly, Jaroslaw Badera (5%) contributed to the Introduction (section 1) and revisions in section 6 (Discussion). All co-authors provided feedback on the manuscript as well as during the two rounds of revisions and responses to reviewers and editors. This paper illustrates my ability to coordinate an extensive international research team.

In **Study V**, the second author (Lukáš Lehotský, 10%) contributed by data collection and writing most of subsection 3.2 (Data) as well as by participation on the revisions in section 5 (Discussion and conclusions). The third author (Filip Černoch, 5%) contributed by writing the case description (Appendix A) as well as general comments on the paper during its preparation and revisions. My contribution (85%) involved everything else, including development of the research design, general framing of the paper, data analysis (100% of statistical data analysis), drafting of the paper manuscript, and leading all revisions based on reviewers' and editors' comments.

2.3 Study summaries

Study I (Ocelík & Osička, 2014) explores the discursive construction of the so-called quiet revolution (B. K. Sovacool, 2014) in Russian foreign policy. More specifically, it analyses the *framing of unconventional resources of natural gas* (UNG) *in foreign energy policy* of the Russian Federation. The study seeks to answer the following research question:

RQ: *How are the UNG framed in the foreign energy policy discourse of the Russian Federation in years 2009–2011?*

The study assumes that policy actors engage in international politics based on their ability to imagine particular courses of action which are already available (although also open for (re)negotiation) in various "cultural stocks" such as specific discourses (Doty, 1993; Hopf, 2002; Weldes, 1996). Thus, the study uses the concept of *foreign energy policy* (FEP) defined as a set of understandings of the contents, principles, and focus areas of energy relations with other countries (Shadrina, 2010). The FEP discourse then consists of particular social representations construed by texts and talks (see N. Fairclough, 1993). Policy actors struggle to shape relevant discourses in ways that fit their interests, among other things, through framing. *Frames* are understood as shared interpretative schemes that signify and condense the world "out there" by highlighting particular aspects of the issue while suppressing others (Entman, 1993; Snow & Benford, 1992). Consequently, frames promote particular interpretations, evaluations, and/or solutions of the issue (Entman, 1993). The persuasiveness of frames is typically strengthened by *argumentation schemes*, i.e. stereotypical patterns of reasoning, that link the communicated message with "common sense" understandings of the issue (I. Fairclough & Fairclough, 2012; Reed & Walton, 2005).

The study uses frame analysis (Entman, 1993) aided by qualitative semantic network analysis (Friese, 2011) to examine a corpus (N = 20, 321 coding units) consisting of (1) official state documents, (2) official documents, interviews, announcements of the Gazprom Company, and (3) Russian internet and printed media between the years 2009 and 2011.

The results show that two frames have been used. The first frame promotes the image of Russia as a reliable supplier, contrasted with the unstable regions of North Africa and the Middle East, while emphasizing the role of natural gas for energy transition resulting in the upcoming "Century of Gas". The second frame is then constructed around the qualitative distinctiveness of "conventional" natural gas, which is depicted as ecological, efficient, proven, and safe, and unconventional resources of natural gas, which are defined by the correspondingly opposite attributes. The frames are reinforced by economic and environmental argumentation schemes, which use common-sense tropes such as that the development of unconventional resources is an "irresponsible experiment" at the expense of "taxpayers' money".

Study II (Černý & Ocelík, 2020) examines *policy debate on coal phase-out* in the Czech Republic centered around the rescindment of the coal mining limits at the Bílina mine. More specifically, the study maps the evolution of the debate in 2015 with a focus on identifying incumbents' discursive strategies. The study seeks to answer the following research question:

RQ: *How did the position of incumbents in the media discourse on coal phase-out evolve over the course of the year 2015?*

The study assumes that media discourse emerges as the result of multiple interactions and importantly affects public opinion as well as the decision-making of political authorities (Leifeld, 2016) on contested issues such as energy transition (Osička et al., 2020) and climate change (Boykoff, 2011; Broadbent et al., 2016; Lehotský et al., 2019). Incumbents, i.e. actors who benefit most from the prevailing system (Smink, 2015), use various strategies to resist or slow down regime change (Geels, 2014). This includes discursive strategies where policy actors and their coalitions promote media narratives fitting their policy objectives and/or countering the policy objectives of their opponents. Specifically, four strategies as defined by Johnstone et al. (2017) were examined. First, *securitization* identifies the incumbents' interests, such as coal mining expansion and/or continuation, with matters of national or regional security. This is typically articulated by supply security appeals contrasting coal as a reliable domestic source versus import "dependency-inducing" natural gas or "volatile" renewables. Second, *reinvention* reframes the core components of the existing sociotechnical regime, such as use of coal, in a way that appears new or innovative, with so-called clean coal technologies being a good example of such strategy. Third, *masking* suppresses, socializes, or externalizes the current regime's full costs. For instance, incumbents only rarely engage in debates on the environmental costs and health impacts of coal mining. Fourth, *capture* legitimates and/or puts incumbents into positions of political or regulatory power. The "revolving door" practice is a prime example of the blurring distinction between public and private interests (Johnstone et al., 2017).

The study uses discourse network analysis (Leifeld, Gruber, & Bossner, 2019) to analyze a corpus consisting of coverage of coal mining and coal use in all four major daily newspapers and local daily newspapers in 2015 (N = 705, 890 coding units).

The results show that incumbents adeptly used a mix of discursive strategies, consisting mostly of securitization complemented by reinvention and masking, to establish a coherent and persuasive narrative. This "winner's tale" (Shanahan, McBeth, et al., 2011) emphasized socioeconomic issues such as increased unemployment and regional decline (securitization) as well as the critical dependency of heating supplies on coal (reinvention) while excluding the negative impacts of coal mining (masking). Surprisingly, securitization appeals on import dependence resulting from coal phase-out were rare (Lehotský et al., 2019).

Study III (Ocelík, 2022) examines *media coverage on climate change* in the Czech Republic. More specifically, the study maps the evolution of front-page newspaper coverage of climate change over most of the past decade with a focus on climate scepticism prevalence and employed communication strategies. The study seeks to answer two research questions:

RQ1: *How has the prevalence of climate change scepticism in the coverage evolved over time?*
RQ2: *What counter-framing strategies have been employed therein by the sceptics?*

The study assumes that mass media are a main source of information and provide visible spaces for policy debates involving diverse actors who propagate ideas and narratives that support their policy objectives and/or counter those of their opponents (Broadbent et al., 2016; Leifeld, 2017; Stoddart et al., 2016). Media representation is thus crucial for such discursive contests where engaged actors struggle to sustain prevailing interpretations of the issue or to challenge them by promoting rival alternatives (Koopmans & Statham, 1999; Trumbo, 1996). In other words, the policy actors pursue their interests through claim-making in media since claims that become news reach broad audiences and gain legitimacy (see Trumbo, 1996). Media are also powerful *interpreters* of scientific findings and policies, which importantly affects the relationships among scientists, policy actors, and the public (Boykoff, 2013). As a result, media coverage determines who is allowed to authoritatively speak on an issue and what the relevant "facts" are (Carvalho, 2007), which applies also to communication of climate science and its translation to policy responses (Boykoff & Roberts, 2007). Such discursive struggle notably includes the questioning of the scientific consensus on anthropogenic sources of climate change by an assemblage of contrarian scientists, industry incumbents as well as conservative politicians, think-tanks, and media (Dunlap & McCright, 2011).

Akin to Study II (Černý & Ocelík, 2020), this study uses discourse network analysis (Leifeld, Gruber, & Bossner, 2019) to analyze a corpus consisting of front-page coverage of climate change in all four major daily newspapers between the years 2009 and 2018 (N = 303, 800 coding units).

The findings indicate that the substantial presence of scepticism was to a large extent linked with the presidency of Václav Klaus (see Vidomus, 2018), who exploited his privileged position, and the most prevalent strategy was based on attacks on the collective character of opponents (see Benford & Hunt, 2003). It was also found that the sceptics adeptly "localized" the so-called Anglo-American Model, which combines populist ideology and conservative values. The former juxtaposes the pure common people against the corrupted elites represented by the over-regulating European Union as well as the deceitful alliance of the climate science community and mainstream media supported by a nefarious minority of environmental activists. The latter emphasizes the importance of national sovereignty and market-based responses vis-à-vis the "progressivist agenda".

Study IV (Ocelík, Svobodová, et al., 2019) examines the coal policy subsystem in the Czech Republic. More specifically, it investigates the *coalition structure of the subsystem* as well as the *prevailing patterns of interactions within the subsystem*. The study seeks to answer the following overarching research question:

RQ: *How do policy actors and their coalitions interact to influence coal policy in an adversarial subsystem?*

The study applies the Advocacy Coalition Framework, which assumes that policies are shaped by multiple actors and their groups, i.e., coalitions, who operate mostly within an issue-defined subset of a political system, i.e. a policy subsystem (see P. A. Sabatier, 1988; Weible et al., 2016a). Since policy actors typically cannot achieve their goals through shaping the policies on their own, inter-organizational interactions are essential for the policy-making process. The interactions allow transfers of resources, which may range from information exchange or access to political authority to alliance formation (Ocelík, Svobodová, et al., 2019). *Advocacy coalitions* are groups of actors who share similar policy core beliefs, i.e. salient normative assumptions about the subsystem organization, and engage in a non-trivial degree of coordination (P. A. Sabatier, 1998). The presence of two or more coalitions with low compatibility in policy core beliefs, a low level of between-coalition coordination, and a high level of within-coalition coordination indicates the adversarial character of the subsystem (Weible et al., 2010). The study further examines (1) the degree of fragmentation of the decision-making actors, (2) the targeting of decision-makers, and (3) coalition-based patterns of expert information exchange.

The study uses standard measures of social network analysis (Wasserman & Faust, 1994) and block modelling techniques (White et al., 1976) to analyze questionnaire data surveyed from organization representatives (N = 83, response rate = 82%). The list of organizations (network borders) was defined based on a combination of decisional, positional, and reputational approaches (Knoke, 1993).

The results show the presence of two antagonist coalitions (cf. Ingold et al., 2017; Sotirov & Memmler, 2012)—the Industry Coalition and Environmental Coalition—and a residual group. The Industry Coalition, represented mostly by industry incumbents, was in a superior position with direct access to decision-making through the Ministry of Industry and Trade and two governing political parties. The Environmental Coalition, represented mostly by environmental non-governmental organizations (ENGOs) and research organizations, included only one organization with decision-making competences—the Ministry of Agriculture. The results also indicate high fragmentation of policy core beliefs among decision-making actors (governing parties and competent state agencies), targeting of decision-makers both by industry and ENGOs, as well as a high level of within-coalition expert information exchange and low level of between-coalition expert information exchange. The combination of the abovementioned factors limits the potential for between-coalition policy learning (see P. A. Sabatier, 1987) and suggests rather the overlay of newly adopted policies on the core of the current regime (see Geels et al., 2016), which would hinder a major policy for a rapid coal phase-out.

Study V (Ocelík et al., 2021) examines local opposition toward rescission of the coal mining limits in Northern Bohemia. More specifically, the study investigates the *role of social networks for participation in local opposition* by focusing on two research objectives:

RO1: *Explore the local opposition's long-term cooperation network.*
RO2: *Test the contribution of network effects to participation in the local opposition*.

The study posits that local opposition can be conceptualized as an instance of interdependent collective action, i.e. a group of individuals coordinating their activities to pursue a common goal through non-institutionalized means (Tindall et al., 2015). Research on collective action (Della Porta et al., 2015; Diani & McAdam, 2003) has documented that individual participation is driven by mobilization structures including both formal organizations as well as *social networks* enabling and/or constraining the exchange of information and resources, development of pro-movement attitudes and collective identities. Kitts (2000) earlier summarized that the "pull" effects of social networks are more important than the "push" effects of sociopsychological individual attributes such as attitudes or grievances. Thus, the study hypothesized that the intensity of participation (differential participation) is driven both by individual attributes, including socioeconomic characteristics (Van Stekelenburg et al., 2009) or sociopsychological attitudes such as place attachment (Devine-Wright, 2009a), and by the network embeddedness (Passy & Giugni, 2001; Tindall, 2002) of local opposition members.

The study uses standard measures of social network analysis (Wasserman & Faust, 1994) and a novel autologistic actor attribute modelling (Daraganova & Robins, 2012) to analyze questionnaire data (N = 48) collected via snowball sampling (L. A. Goodman, 1961) between April 2017 and February 2018.

As for the first research objective, the findings showed that the opposition exhibited a polycentric organization (cf. Gerlach, 1999) with multiple centers formed around high-level participants who coordinated otherwise weakly connected parts of the opposition network. The polycentric organization facilitates the creation of partnerships despite differences over tactics or beliefs within the opposition (see Drapalova, 2018) and enables organizational, ideological, and spatial heterogeneity among the opposition (see Černoch, Lehotský, Ocelík, Osička, et al., 2019). As for the second research objective, the number of connections to others one has (*actor activity*) was found to be the only predictor of the intensity of engagement in opposition activities (cf. Passy & Giugni, 2001; Tindall, 2002), thus showing the critical importance of social networks for participation and mobilization processes (see Diani & McAdam, 2003). In other words, network embeddedness matters more than individual attributes for differential participation. Greater understanding of the underlying collective action dynamics in such contexts is needed for formulating institutional and policy designs aimed at improving the efficiency and fairness of the energy transition (see McCauley & Heffron, 2018).

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