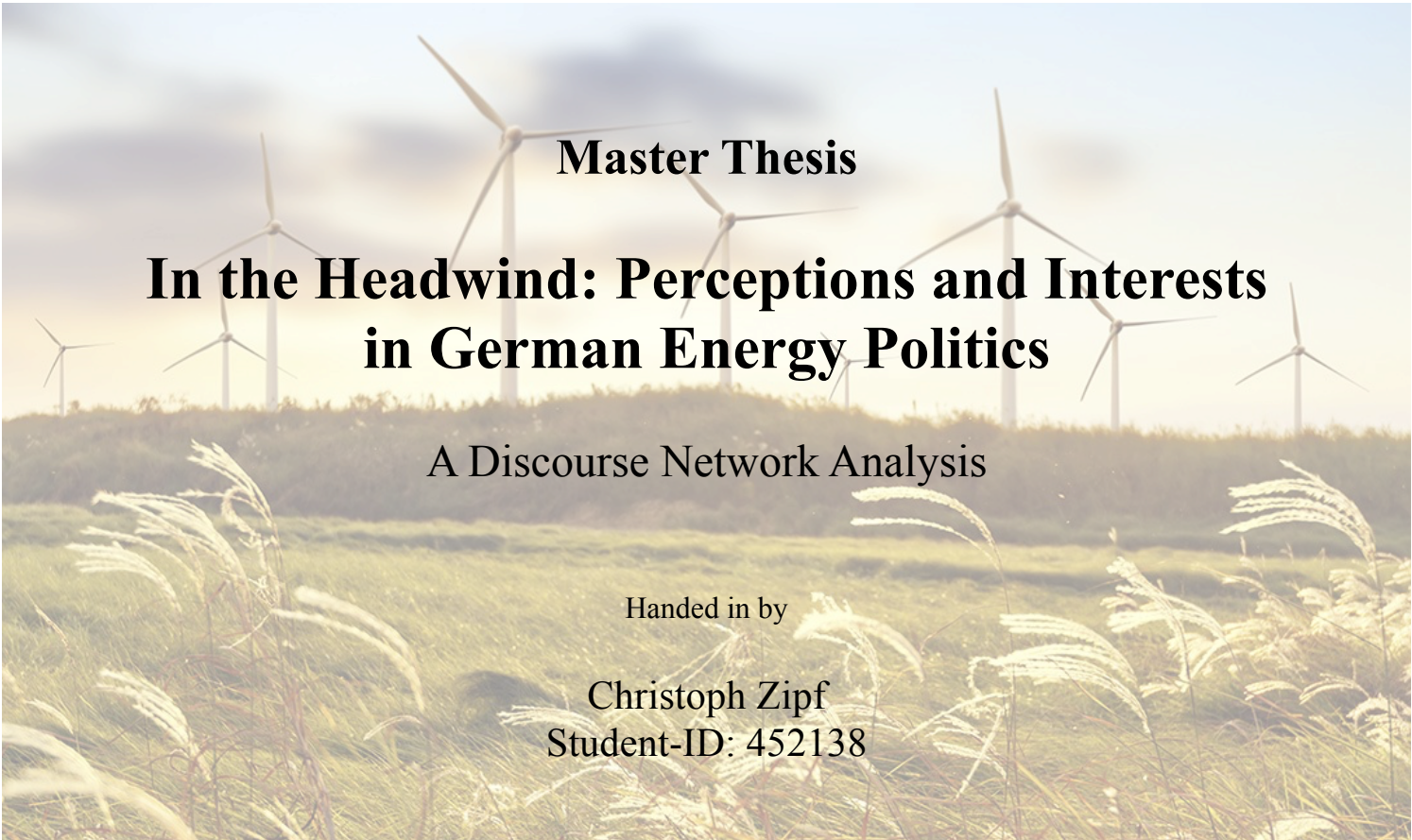




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Master Thesis
**In the Headwind: Perceptions and Interests
in German Energy Politics**

A Discourse Network Analysis

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Executive Summary

- *This thesis is researching agenda-setting and the underlying political processes for the case of German energy politics.*
- *The case study pays special attention to the 2014 EEG amendment, a highly mediatized and controversial legislation that constitutes the regulatory core of Germany's Energiewende - the ambitious transition of the country's energy system from nuclear power and fossil fuels to renewable energy sources.*
- *The main question of this thesis is concerned with the impact of dynamics in network composition on the formation of the policy agenda. In other words: Do political discourse coalitions and their configuration have an influence on the agenda-setting process and if so, how do they influence it?*
- *The thesis defines the terms agenda and agenda-setting, theoretically explains the characteristics of agenda-setting processes and presents influential theories on the role of actors and coalitions in these processes.*
- *The case study is designed as a Discourse Network Analysis (DNA), a relatively novel method, that aggregates media data to actor networks, mapping congruence and conflict with regards to different policies and ideational concepts. Thus, DNA is a powerful method to illuminate policy preferences and visualize coherent discourse coalitions within policy sub-systems.*
- *Empirically, this thesis illuminates the agenda-setting process for the case of the 2014 EEG amendment. Special attention is paid to the media agenda, where five central conflict lines are identified: Financing, Economic and Social Implications, Future Energy Mix, Grids and Decentralization. The most influential political arguments (concepts) with regards to those conflict lines are presented and the prevalence of single concepts within the media agenda is researched. It is found that for the research period before the adoption of the amendment, "Financing" is the most central conflict line, while after the adoption the conflict on "Grids and Grid Expansions" prevails.*
- *Moreover, the most central actors in setting the media agenda are identified and, according to their policy core beliefs, clustered to competing discourse coalitions. Dynamics with regards to the resilience, size and composition of these discourse coalitions are illustrated for the research period from 2013 to 2016. For the period before the amendment, two coalitions, a political and a liberal coalition, are found, while after the adoption, three coalitions, a hegemonic, an environmental and a regional coalition, are diagnosed.*
- *Finally, the assumed link between changes in network composition and policy agenda is researched by analysing the 2014 EEG amendment. It is found that the most central conflict lines on the media agenda are also the most significant changes in the legislation. Especially, those concepts promoted by the identified liberal coalition are taken onto the policy agenda.*

Preface/Acknowledgement:

The empirical findings presented in this master thesis originate from a student project started in 2016 at the University of Konstanz (Germany). As a group of students, we decided to take on the inevitable topic of energy politics from a new perspective. Ever since the nuclear catastrophe in Fukushima resulting in the German phase-out from nuclear power, the German “Energiewende” and its developments have been ubiquitous in political debates, the media, public discourse and academic research. Less, however, had been done to present a systematic long-term perspective of the political processes that underlie the ambitious political project.

We, therefore, intended to use the relatively novel approach of discourse network analysis (DNA) in order to (1) increase the understanding for the ongoing transition process that will only be completed by 2030, (2) shed a light on the particular interests and strategies of actors involved in the Energiewende and (3) understand their attempts to shape public perceptions and opinion on the macrosocial project. Our research project - named “Energienetzwerke” - is student-owned and independent of any university or department. As a matter of fact, to pursue their master degrees, the collaborating students were spread over the world and collaborated mostly via Skype. Over the course of nearly a year, the project team coded 4097 newspaper articles, thus, creating the biggest and most comprehensive DNA dataset on German energy policy we are aware of.

Our research project received attention and upon application we got awarded a one-yearly funding by the “Think Lab Energie, Gesellschaft, Wandel”, a *Stiftung der deutschen Wirtschaft (sdw)* and *Innogy Stiftung für Energie und Gesellschaft* initiative. The funding allowed us to host project-internal information sessions, coordinate the development of our research project, attend training and qualification work-shops offered by the Think Lab and cover our travelling costs. Thus, we are very thankful for the support of both foundations.

I want to thank Joshua Seitz (University of Konstanz) and Matthias Frey (University of Bremen), who acted as project leads and managed the communication with the funding institutions. As a project team, we hope that our analyses, which will partly be presented at a ThinkLab event in June 2017 in Berlin, illuminate the underlying processes and discourses about the Energiewende, present the interests and perceptions of involved actors and coalitions and most importantly contributes to a constructive dialogue that facilitates the success of Germany’s energy transition in the long-run.

Moreover, I want to thank Professor Moody for her interest in this research project and the opportunity to pursue the topic further as a master thesis. Throughout the writing process, she helped me to structure the paper, critically challenged my research, where needed and contributed numerous valuable thoughts and ideas.

TABLE OF CONTENTS

1.	INTRODUCTION	6
1.1.	RESEARCH GOAL AND RESEARCH QUESTIONS	9
1.2.	RESEARCH RELEVANCE	11
1.2.1.	SUMMARIZING THE EXISTING LITERATURE: A CRITIQUE	11
1.3.	STRUCTURE OF THE PAPER	13
2.	THEORETICAL FRAMEWORK	15
2.1.	BASIC ASSUMPTIONS	15
2.2.	AGENDAS	17
2.3.	AGENDA-SETTING	18
2.4.	THE ROLE OF MEDIA IN AGENDA SETTING	21
2.5.	THEORIES ON AGENDA-SETTING	23
2.5.1.	ADVOCACY COALITION FRAMEWORK (AFC) – BELIEF SYSTEMS IN POLICY MAKING	23
2.5.2.	DISCOURSE COALITION APPROACH (DCA) – A POST-POSITIVIST ALTERNATIVE	26
2.5.3.	NARRATIVE POLICY FRAMEWORK (NPF) – COMBINING THEORETICAL STRANDS	27
3.	RESEARCH DESIGN	30
3.1.	TOWARDS A CONCEPTUAL FRAMEWORK FOR DISCOURSE NETWORK ANALYSIS (DNA)	30
3.2.	OPERATIONALIZATION AND CODING SCHEME	34
3.2.1.	ACTORS AND POLICY SUBSYSTEM	34
3.2.2.	CONCEPTS	36
3.2.3.	STATEMENTS	37
4.	METHODOLOGY	38
4.1.	STRATEGY: CASE SELECTION	38
4.2.	METHODS: DESCRIPTIVE MODELS OF DISCOURSE NETWORKS	38
4.3.	SAMPLE	46
4.4.	FROM DISCOURSE ANALYSIS TO DISCOURSE NETWORK ANALYSIS – A NEW APPROACH	42
4.5.	QUALITY INDICATORS	51
5.	CONTEXT	55
5.1.	GERMANY’S POLITICAL SYSTEM	55
5.2.	GERMAN ENERGY POLITICS	57
6.	ANALYSIS	59
6.1.	THE MEDIA AGENDA: CONFLICT LINES IN GERMAN ENERGY POLICY	59
6.1.1.	FINANCING	60
6.1.2.	ECONOMIC AND SOCIAL IMPLICATION	64
6.1.3.	FUTURE ENERGY MIX (RENEWABLES VS. FOSSIL FUELS)	68
6.1.4.	GRIDS:	71
6.1.5.	DECENTRALIZATION	73
6.2.	MEDIA AGENDA II: CONCEPTS LEADING THE GERMAN ENERGY DISCOURSE	75
6.3.	POLICY ENTREPRENEURS AND BROKERS: ACTORS IN GERMANY’S ENERGY DISCOURSE	79
6.4.	DISCOURSE COALITIONS: STRUCTURING THE POLICY SUBSYSTEM	84
6.5.	STRATEGIC NARRATIVES: ISSUE CONTAINMENT AND EXPANSION	89
6.6.	THE POLICY AGENDA: SET BY NETWORK DYNAMICS?	92
7.	CONCLUSION	97
8.	DISCUSSION	100
9.	REFERENCES	103

TABLE OF FIGURES

FIGURE 1: THE ENERGIEWENDE TARGET TRIANGLE..	7
FIGURE 2: THE ADVOCACY COALITION FRAMEWORK.	24
FIGURE 3: THE NARRATIVE POLICY FRAMEWORK.	29
FIGURE 4: A BROAD FRAMEWORK OF AGENDA-SETTING.	30
FIGURE 5: CONCEPTUAL MODEL	33
FIGURE 6: OVERVIEW: OPERATIONALIZATION OF KEY VARIABLES.	34
FIGURE 7: DIFFERENT THEORIES AND THEIR IMPLICATIONS FOR NETWORK ANALYSIS	40
FIGURE 8: QUANTITATIVE AND QUALITATIVE NETWORK ANALYSIS COMPARED	42
FIGURE 9: MILESTONES OF GERMAN AND INTERNATIONAL ENERGY POLITICS WITHIN RESEARCH PERIOD.	47
TABLE 10: NEWSPAPER SAMPLE.	48
FIGURE 11: TIMELINE: MILESTONES OF GERMAN AND INTERNATIONAL ENERGY POLITICS 2013- 2017.	50
FIGURE 12: SCHEMATIC VISUALIZATION OF ONE-MODE AND TWO-MODE NETWORKS.	45
FIGURE 13: THE FIVE IDENTIFIED CATEGORIES WITH REGARDS TO THE ENERGIEWENDE TARGET TRIANGLE.	59
FIGURE 14: AFFILIATION NETWORK FOR TOP 5 CATEGORIES “FINANCING”.	60
FIGURE 15: AFFILIATION NETWORK FOR TOP 5 CATEGORIES “ECONOMIC AND SOCIAL IMPLICATIONS”.	64
FIGURE 16: AFFILIATION NETWORK FOR TOP FIVE CATEGORIES “FUTURE ENERGY MIX”.	68
FIGURE 17: AFFILIATION NETWORK FOR TOP FIVE CATEGORIES “GRIDS”.	71
FIGURE 18: AFFILIATION NETWORK FOR TOP FIVE CATEGORIES DECENTRALIZATION.	73
FIGURE 19-22: CONCEPT CENTRALITY 2013-2016 BY YEAR.	77
FIGURE 24: MOST CENTRAL CONCEPTS PER YEAR, 2013-2016.	78
FIGURE 25: CONCEPT CENTRALITY 2013-2016 AGGREGATED.	78
FIGURE 26: CLASSIFICATION OF ACTORS IN THE DATASET	79
FIGURE 27: NETWORK ACTORS BY DEGREE SCORE 01/2013-08/2014.	80
FIGURE 28: NETWORK ACTORS BY DEGREE SCORE 08/2014-12/2016.	81
FIGURE 29: NETWORK ACTORS BY BETWEENNESS SCORE 01/2013-08/2014.	83
FIGURE 30: NETWORK ACTORS BY BETWEENNESS SCORE 08/2014-12/2016.	83
FIGURE 31: DISCOURSE COALITIONS IN THE NETWORK FOR THE PERIOD 01/2013-07/2014	86
FIGURE 32: DISCOURSE COALITIONS IN THE NETWORK FOR THE PERIOD 08/2014-12/2016	88
FIGURE 33: MOST SIGNIFICANT REFORMS AND ASSOCIATED CONFLICT LINES.	92
FIGURE 34: MOST SIGNIFICANT REFORMS IN THE 2014 EEG-AMENDMENT.	96

“Daring ideas are like chessmen moved forward.
They may be beaten, but they may start a winning game.”
Johann Wolfgang von Goethe

1. Introduction

The “Energiewende” (energy transition) is one of the major political projects carried out in Germany nowadays. Officially, it started in 2000 with the adoption of the Renewable Energy Sources Act (EEG) and is designed to be completed by 2050, when 80% of German energy supply are to be provided by renewable energy sources (RES). Most scholars, however, date the start of the Energiewende as far back as the 1970s when the first grassroots movements gathered to protest for a more environment-friendly energy production and against the construction of new nuclear power plants in Germany¹. Indeed, the first book using the term Energiewende (Öko-Institut 1980) was published in 1980², at a time, when solar and wind energy were still expensive pilot projects, whose large-scale commercial use was perceived an unfeasible utopia (Gochermann: 2016: 6). In 2013, chancellor Angela Merkel (CDU) named the Energiewende the “project of the century” (Merkel in Joas et al. 2016: 43) and current Federal President Franz-Walter Steinmeier (SPD), in 2015, referred to it as Germany’s “man-on-the-moon-mission” (Steinmeier in Morris & Jungjohann 2016: 9). Hager & Stefes (2016) in the abstract to their book “Germany’s Energy Transition” label the Energiewende “one of the most important political, economic and social undertakings of our time”.

As Goethe’s quote heading this chapter suggests, Germany’s daring idea of a fundamental energy transition is everything but unchallenged. After all, the decision to transform the energy sector was a “political will” (Sühlsen & Hisschemöller 2014: 324), promoted and passed through the institutions by “a handful of Green and SPD environmental politicians” (Gründinger 2017: 278). The uniqueness of the fundamental energy transition implies unpredictable risks and elements of uncertainty (Wang 2014: 1742; Kleinknecht 2015). Impacting production, distribution and pricing of energy, the Energiewende, from its early days on, has been observed sceptically. Since the 2011 nuclear catastrophe in Fukushima, resulting in Germany’s sudden decision to phase-out from nuclear power by 2022, it is ubiquitous in national political debates, media and academic research. Especially its main body of legislation,

¹ see Morris & Jungjohann (2016) for a detailed historic overview

² Originally, the term Energiewende was used by environmentalists, grassroots movements and protesters as a synonym for their claim to phase-out from nuclear power (Morris & Jungjohann 2016: 15). It is a euphemistic neologism combining the German word for “energy” and with the word for “turn”, building on positive associations with the German reunification (“die Wende”).

the Renewable Energy Act (EEG) is subject to extensive political discourses.

Political discourses (cf. Janning et al. 2009) are verbal or written interactions between political actors that publically reveal preference for certain policy instruments and aversion to alternatives. Hence, by definition, discourses are characterized by competition for power, legitimacy and public support. While most actors agree on the general vision of the Energiewende, its course, scope and speed remain subject to political discourse. Since 2000, ahead of each of the five EEG amendments, rivalling interest groups have tried to set the policy agenda in their favour.³ The composition of these groups, however, is quite dynamic, as Gründinger (2017: 273) shows for the adoption of the initial EEG.

The Energiewende comes with “interconnected challenges” (Cherp et al. 2011: 75) in relation to the “target triad” of (1) cost effectiveness, (2) environmental sustainability and (3) supply security.

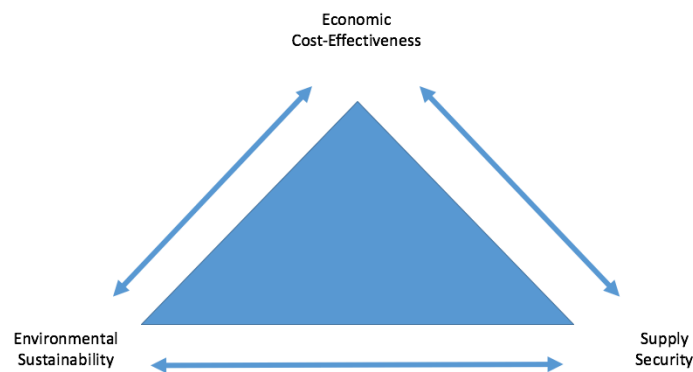


Figure 1: The Energiewende target triangle. Source: Buchholz et al. 2012; Ohlhorst 2015: 304; Gochermann 2016: 43; Jansen & van der Welle 2017: 323.

On the environmental sustainability end of the target triangle, (1) climate change mitigation with first national CO₂-reduction targets, dating as far back as 1990 (Morris & Jungjohann 2016: 142; Vogelpohl et al. 2016), (2) decarbonisation, as agreed to at the G7 Summit in Elmau (Germany) in 2015 and (3) the reduction of nuclear power’s environmental risks are the main aims of the Energiewende. Critics of conventional energy production gained momentum, due to major events such as the oil crises, the nuclear catastrophe in Chernobyl 1986, the founding of the Green Party (B90G) and the 2011, the nuclear accident in Fukushima, resulting in the German decision to phase-out from nuclear power until 2022 (cf. Renn & Marshall 2016: 227). Internationally, the German position on nuclear energy has often been

³ With the creation of the first renewable energy interest group in the early 1990s (Morris & Jungjohann 2016: 157) and the first active political campaigning of pro-renewable interests in 1997 (Gmelin 2012: 59-60; Hirschl 2008: 136-137; Lauber & Mez 2004: 603), new actors organized themselves into what today are influential RES lobby groups (Sühlsen & Hisschemöller 2014).

labelled as irrational with a view to the technology's empirical risks (cf. Wang 2014: 1743). Undoubtedly, however, the focus on nuclear power in the environmental debate, allowed for cost-effective conventional energy sources (CES) to grow and new pits to be opened (Lauber & Jacobsson 2015), undercutting climate change mitigation (Renn & Marshall 2016; Kleinert 2011).

On the cost effectiveness end of the target triangle, the expansion of RES does not only include the construction of new facilities. As RES is produced by numerous, less powerful and more decentralized facilities than conventional energy production, these facilities also need grid connections. The high volatility of RES, further, creates challenges with regards to grid stability, consumption patterns and storage facilities. All these investments are cost-intensive. The Energiewende aims at keeping the financial burden for German companies low, in order for them to remain competitive. Otherwise, national production and employees are endangered. At the same time, however, the burden for tax-payers and consumers has to be kept low in order to avoid debates on "energy poverty" (Kopatz et al 2010; Tews 2013; Frondel & Sommer 2014).

On the supply security end of the target triangle, energy politics is linked to geopolitics and international trade flows being used as a strategic weapon in international affairs (Cherp et al. 2011). With more than 60% of consumed fossil fuels being imported from GIS countries, Norway, UK, Nigeria, Tunisia and Libya (AG Energiebilanzen 2017), energy security remains a major issue in Germany (McCollum et al. 2014). The imperfect competition of few monopolistic suppliers (Goldthau 2012: 68), the oil crises (Morris & Jungjohann 2016: 3) and ongoing conflicts or renewed tensions in the exporting countries, revived the debate on Germany's supply reliability (Weimann 2013: 794). From this perspective, the main goal is a transition from imported fossil fuels to domestically produced renewable energy sources, promising geopolitical energy autarky and supply security.⁴

The target triangle illustrates that the precise goals of the Energiewende are contested, conflicting and widely unclear (Weimann 2013). As illustrated, Germany is facing challenging trade-offs. Firstly, it is trying to cut carbon emissions, while at the same time phasing-out of nuclear power, one of the most carbon-neutral technologies. Secondly, it tries to increase its supply security by promoting a highly volatile technology that depends on weather phenomena. Thirdly, it tries to perform a cost-efficient transition, while massive public investments into plants, grids and storage facilities are needed. Joas et al. (2016) in qualitative interviews with politicians, public administrators and important stakeholders identify 14 different goals. The

⁴ Some authors, in contrast, stress the importance of international energy trade regimes for peace and stability (Weimann 2013: 794; Gochermann 2016: 48).

precise political goals of the Energiewende as well as their order of priority appear to be “by and large unclear” and that “further debate about the top-level goals is indispensable” (Joas et al. 2016: 42). A “political master plan” is missing (Goehermann 2016: 9). Thus, the path of Germany’s Energiewende is not pre-defined but continuously re-negotiated in discursive political processes.

1.1. **Research goal and research questions**

This thesis provides a longitude newspaper content analysis covering all aspects of the Energiewende for a research period of four years (2013-2017). Building on a case study of Germany’s extensive and controversial 2014 EEG amendment, the goal of this thesis is to explain how the policy agenda (Dearing & Rodgers 1992) is set in fragmented and highly polarized governance networks. The paper is designed as a long-term media content analysis. The empirical findings presented originate from an independent, student-owned research project started in 2016 (s. Appendix for details). The project uses the relatively novel methodological approach of discourse network analysis (DNA), a method to systematically analyse and visualize discourses and the interests and strategies of involved actors. The main research question is concerned with agenda-setting and the underlying political processes:

How do changes in network composition impact the policy agenda?

In order to come to an answer to this main research question, several sub-questions are formulated. Firstly, with regards to agenda-setting, the terms agenda and agenda-setting (Kingdon 1995; Rogers et al. 1993; Sabatier & Jenkins-Smith 1993; Cobb & Elder 1983; Dearing & Rogers 1992; Birkland 2007) have to be defined. As this thesis is designed as a media analysis, the importance of media in the process of agenda-setting is of special interest. A first sub-question, therefore, asks:

Which forms of agendas can be found in the literature and how does agenda-setting come about? (Section 2)

This question can only be answered in a satisfying manner, when theories of the policy process of agenda-setting are included. The core theoretical emphasis of this thesis deals with the formation of governance networks (cf. Klijn & Koppenjan 2016) and coalitions (cf. Jenkins-Smith & Sabatier 1993; Hajer 1993) in so-called policy subsystems (Sabatier 1988), their

composition and dynamics over time. From the long list of existing theories that research networks with that emphasis, especially cognitive approaches (Nagel 2016: 71; Mueller 1994; Nullmeier 1993; 2001), focusing on belief systems (Sabatier 1989), common storylines (Hajer 1993) and narratives (Jones & McBeth 2010), are considered. This leads to another sub-question:

What are the most influential theories, explaining the link between network dynamics, the formation of clusters of actors and the process of setting the policy agenda and which elements do they entail? (Section 2)

After presenting these theories, their single elements have to be applied to the case study of German energy politics. To do so, a conceptual framework is developed that explains the assumed processes in agenda-setting, integrating causal assumptions about the exact roles and the actions of network actors in this process. The conceptual model pays special attention to the use of the media agenda (Dearing & Rogers 1992; Walgraave & van Aelst 2006), as a mean to mobilize bias (Schattschneider 1960). It is shedding a light on the sub-question:

How are network actors and discourse coalitions expected to influence the development of the policy agenda? (Section 3)

Before being able to test the conceptual model against empirical findings for the case of the 2014 EEG amendment, methodological fundamentals of network analysis have to be explained and the method of this research has to be positioned within the vast array of operationalisations in empirical network research. Other sub-questions, therefore, are called:

What are common methods in network analysis and how are key variables operationalized? Which operationalization is most fruitful for the case study on German energy politics? (Section 4)

Finally, Discourse Network Analysis (DNA) is utilized to test the conceptual model against the empirical findings in order to establish to which degree the causal relations assumed within the conceptual framework can be confirmed for the case of German energy politics. In this analytical step, empirical findings with regards to conflict lines on the media agenda, actor relations, coalition formation, strategic communication and coalition dynamics over time are

portrayed. The last sub-question, therefore, asks:

What is the empirical influence of dynamics in network composition on processes of agenda-setting in the specific case of the 2014 EEG amendment?

1.2. Research Relevance

Reviewing the extensive list of publications on the Energiewende, one might state that most aspects have been sufficiently researched. In this section, I explain why DNA is superior to some of those contributions and which additional value a network analysis generates for the understanding of the Energiewende.

1.2.1. Academic Relevance

This thesis aims to add to the existing theory on agenda-setting in the sector of energy politics. The Energiewende is not a new project. As such, several authors have elaborated on its origins (cf. Morris & Jungjohann 2016; Hake et al. 2015; Jacobs 2012), challenges (McCollum et al. 2014; Fischer et al. 2016; Renn & Marshall 2016; Tews 2013; Kermfert & Canzler 2016; Gochermann 2016; Kleinknecht 2015; Kermfert et al. 2013; Schröder 2014; Weimann 2013) and European dimensions (Fischer 2017). International scholars search for best-practices with regards to energy market design (Rudinger & Aykut 2016), system integration of RES (Wang 2014) or integration of community initiatives (Oteman et al. 2014). Different publications identify change events that shaped agenda-setting, such as the 2011 nuclear accident in Fukushima (Rinscheid 2015; Renn & Marshall 2016; Kleinknecht 2015) or the 1990 StrEG (Gochermann 2016; Morris & Jungjohann 2016). Often institutional path-dependencies and punctuations are assumed as explanations for policy change (Renn & Marshall 2015; Morris & Jungjohann 2016). Only some efforts are undertaken to explain the underlying political processes (cf. Gründinger 2017; Rinscheid 2015). This paper aims to add to the existing findings. Three different aspects of this paper's research promise an advancement as compared to the existing academic publications.

Firstly, DNA offers a systematic and in-depth analysis of the policy sector, drawing a holistic and exhaustive picture of the actors involved in German energy politics, their positioning towards policy alternatives and the formation of clusters and coalitions within the subsystem. Some publications already identify micro-level (Joas et al 2016; Nordensvärd & Urban 2015; Grünfelder 2017; Sühlsen & Hisschemöller 2014) or meso-level (Smith-Stegen & Seel 2013; Gochermann 2016) stakeholders in German energy politics. However, scholars

admit not to be representative in their selection (Joas et al 2016: 44). Most researchers resort to institutional roles (cf. Nordensvärd & Urban 2015: 158) or base their research on punctual interviews with ethnographically identified meso-level actors (Gochermann 2016). Actors that are not positioned in the centre of political institutions might have a significant influence on discourses and agenda-setting. These “tier 2”-actors are systematically underrepresented in the existing studies.⁵ DNA is designed more explorative, as it does not predefine the study units based on their formal institutional roles. Thus, peripheral and less known stakeholders can be identified, included and researched. Moreover, it overcomes traditional methodological disadvantages of interview-based research. Few attempts have been made to identify coalition, their composition and resilience (cf. Weible & Sabatier 2005; Gründinger 2017: 260-273), few of them using DNA (Rinscheid 2015). This paper intends to contribute to these endeavours.

Secondly, this study aims at increasing the variety of methods used to investigate German energy politics. DNA, as a mixed-method approach that includes quantitative indicators of network analysis potentially offers new and more reliable insights to the policy area. Few studies took attempts to empirically and qualitatively research the underlying political processes of the Energiewende. While research institutes (cf. RAP 2015; Buchholz et al. 2012; Öko-Institut 2016; dena 2016), government agencies (cf. BNetzA 2017; Meunier 2017; Poetschke 2017) and ministries (cf. BMWi 2017; BMUB 2016) regularly publish statistical reports, entailing policy recommendations and offer in-depth analyses, most academic publications in the area of political sciences use qualitative research designs or refrain from using academic methodologies to begin with (cf. Joas et al. 2016; Hager & Stefes 2016; Gochermann 2016; Morris & Jungjohann 2016; Renn & Marshall 2016; Gründinger 2017; Fischer 2017; Wang 2014; Ruedinger & Aykut 2015; Rhys 2013; Smil 2016; Hager & Stefes 2016; Lutz et al. 2017). As a matter of fact, many of them remain descriptive in character (Smil 2016; Renn & Marshall 2016; Rhys 2013; Jacobs 2012; Brandmeyer 2013; Bogumil & Holtkamp 2002; Libbe et al. 2010; Edeling 2002). Others are designed as comprehensive and extensive introductions, not necessarily aimed at academic clientele (Kästner & Kießling 2016; Morris & Jungjohann 2016; Gochermann 2016). In doing so, much of the literature takes polarized stands, as a brief glance at some book titles indicates (Wendt 2014; Kleinknecht 2015; Kemfert 2017; Gawel et al. 2012). Especially, French and British academics seem pessimistic about the success of the transition (Deshaises 2014; Ryhs 2013; Ruedinger 2012), going as far

⁵ The Federal Government (Deutsche Bundesregierung 2015) has issued a publication titled the „Who is who of Germany’s Energiewende”, listing the most influential meso-level actors (public agencies, ministries, transmission net operators, research institutes, political associations). Interestingly, some of those undoubtedly important actors have not been identified and researched by any of the presented articles. Thus, also some “tier 1” actors seem to be underrepresented.

as to label it a “mission impossible” (Bourgeois 2014).

Thirdly, this paper accommodates to recent academic claims for the increased necessity of conducting research that utilizes cognitive approaches (Nagel 2016: 71; Mueller 1994; Nullmeier 1993; 2001) and culturalistic theories (Lang & Leifeld 2008). As compared to rational choice and neo-institutionalist approaches to the research of agenda-setting, these approaches are underrepresented. Nevertheless, Leifeld (2009b: 106) remarks a shift towards the inclusion of perceptions, policy beliefs and ideas in academic research. By introducing theories that focus on shared belief systems (Sabatier 1989), common storylines (Hajer 1993) and narratives (Jones & McBeth 2010), this paper aims to accommodate for these claims and add to the academic debate around these approaches to policy analysis.

1.2.2. Societal Relevance

This paper contributes to the understanding of agenda-setting in general and to the understanding of the developments around the EEG and the German Energiewende in specific. “In the days of classical-modernist politics, people knew where politics was conducted and by whom. In most cases people also knew what the most important cleavages were, what they wanted to get from politics and whom to approach or vote for. In the network society this is no longer the case” (Hajer 2003: 89). Therefore, the identification of network actors and clusters of actors that are able to influence and shape the agenda-setting process becomes an important part of policy analysis. By explaining and illustrating conflict lines, coalitions and argumentations this paper adds to the existing empirical evidence on German energy politics. This knowledge can be of interest to governmental parties and agencies, political organizations and civil society alike. Drawing from the presented findings each of these groups might re-evaluate its political claims and communication strategies around the German transition project.

1.3. Structure of the paper

The paper is build up as follows. In the next section the theoretical foundations of the paper are laid out. Important terms for the processes of political discourse and agenda-setting are defined. Moreover, the three guiding theories, Sabatier’s (1988) “Advocacy Coalition Framework” (ACF), Hajer’s (1993) “Discourse Coalition Approach” (DCA) and the “Narrative Policy Framework” (NPF) developed by Jones & McBeth (2010) are introduced and discussed (Section 2). Afterwards the three frameworks are aggregated to a conceptual model guiding this paper and the most important variables of the framework are operationalized (Section 3). Section 4 introduces to methods of network analysis in general and DNA in particular. It further

entails the paper's research strategy, methods and sample. After some background information on Germany's political system and energy politics (Section 5), in the analysis part, empirical findings with regards to media agenda, conflict lines, discourse coalitions and network structure of German energy politics are presented (Section 6). Finally, a conclusion is summarizing the most important findings (Section 7), discussing their contribution to existing research and highlighting issues for further research (Section 8).

2. Theoretical Framework

In this section, the theoretical foundations of the paper are outlined. After some basic assumptions (2.1.), the important terms agenda (2.2.) and agenda-setting (2.3.) are defined. For the intended media content analysis, special focus is placed on the role of the media in agenda-setting (2.4.). Agenda-setting, one of the elements of the classic policy circle, is intensively researched. In this paper, three different theories, centring their attention on the role of ideas in agenda-setting, have been chosen by the author, who agrees with a list of scholars (cf. Nullmeier 2001: 288; Blyth 1997; Schmidt 2008; 2010; Hay 2006) that the central role of ideas and discourse in policy-making deserves more academic attention: Sabatier's (1988) "Advocacy Coalition Framework" (ACF), Hajer's (1993) "Discourse Coalition Approach" (DCA) and the "Narrative Policy Framework" (NPF) developed by Jones & McBeth (2010). Central elements as well as analytical strengths and shortcomings of each theory are discussed (2.5.1.-2.5.3.).

2.1. Basic Assumptions

Bounded rationality:

Especially economic models assume the notion of rational actors. Rationality means that actors decide based on a consistent, fixed order of preferences, complete information and rational calculation of all costs and benefits (cf. Allison & Zelikow 1999). Nowadays, it has become "universal" (Cairney & Zahariadis 2016: 141) to assume that the rationality of political actors is bounded (Simon 1957; March 1994; Zahariadis 2007: 66). They have to make choices in the face of uncertainty (lack of knowledge, information, ability and time for rational decision-making) and ambiguity (subjective interpretation and selection of desirable problems and solutions). Institutionalists (cf. Hall & Taylor 1996), further, point to the role of institutions, as rationalist incentive structures, historical rules or cultural frames, limiting actors in their choice of policy preferences. Nevertheless, within these bounds, actors act intendedly rational and develop a sense of risk and reward associated with policy decisions (Majone 1989: 24; March 1994). Consequently, in defining problems and solutions, politicians often are not objective rational optimisers but satisfiers. Bounded rationality also states that politicians cannot predict the consequences of their actions adequately (Simon 1957). Thus, they favour risk-averse incrementalism to major policy change (Lindblom 1959).

Beliefs:

Another universal notion states that actors have often deeply held beliefs about the nature of policy problems and appropriate solutions (Bachrach & Baratz 1962; Majone 1989; Hall 1993; Jenkins-Smith & Sabatier 1993; Lindblom 1959). Beliefs can be understood as fixed values that guide the choice of policy instruments. They are embedded into culture, tradition and values and linked to social, political and ideological structures (Birkland 2007: 71). Thus, they are hard to change and the source of political conflict where groups of different believe systems (Sabatier 1988) are confronted with each other.

This paper applies a distinction of three different types of belief systems (Sabatier 1998). Firstly, deep core beliefs, fundamental, normative and ontological axioms that are independent of the subsystem the actor operates in and very resistant to change. Examples are fundamental questions of collectivism versus individualism or domination over nature versus preservation of nature. Sabatier (1998: 104) compares deep core beliefs to religion. Secondly, policy core beliefs, empirical, partly normative beliefs about one specific subsystem that are slightly less resistant to change. An example could be the perceived cause of a problem, e.g. whether or not climate change is human-made. Finally, secondary beliefs are empirical beliefs and policy preferences that relate to minor sub-elements of the policy system, such as specific policy tools, budgetary allocation, targets and objectives. Secondary believes are naturally “readily adjusted in light of new data, experience, or changing strategic considerations” (Sabatier 1998: 104).

Social Constructivism:

Social constructivism (cf. Berger & Luckmann 1966) is an epistemological position on reality, assuming that individuals actively and collectively assign meaning to their social environment. This means that every meaning attributed to any object or concept is context driven and consciously or unconsciously shaped by humans (Moody 2010: 85 for a detailed description). Constructivists highlight the importance of individual perceptions, socialization and the collective institutionalization of shared dominant ideas (Collins 1997; Wendt 1999). Social reality (objects, social phenomena, action patterns, etc.), as a consequence, is “somehow generated by the way we think or talk about it, by our consensus about its nature, by the way we explain it to each other, and by the concepts that we use to grasp it.” (Collins 1997: 2). We shall see that social constructivism is a beneficial perspective on agenda-setting and policy discourses between actors with different and conflicting political believes.

2.2. Agendas

Defining agendas

Various scholars undertook attempts to define, what an agenda is (Kingdon 1995; Rogers et al. 1993; Sabatier & Jenkins-Smith 1993; Cobb & Elder 1983; Dearing & Rogers 1992). Broadly defined, the term agenda refers to a “collection of problems, understandings of causes, symbols, solutions, and other elements of public problems that come to the attention of members of the public and their governmental officials” (Birkland 2007: 63). Other definitions are more fine-grained and differentiate between different types of agendas. Two examples (Cobb & Elder 1983; Dearing & Rodgers 1992) shall be elaborated here.

Cobb & Elder (1983) define three types of agendas deriving from an almost unlimited “agenda universe” which contains all ideas that could possibly be discussed. Firstly, the systematic agenda “consists of all issues that are commonly perceived by members of the political community as meriting public attention and (...) governmental authority” (Cobb & Elder 1983: 85). Secondly, the institutional agenda is a “list of items explicitly up for the active and serious consideration of authoritative decision makers” (ibid.: 85-86). The decision agenda, finally, is the smallest in scope and consists of those elements, government agreed to have draft proposals for legislation on. Issues can be brought up by different stakeholders and promoted from the systemic agenda to the decision agenda. Contrarily, Cobb et al. (1976), emphasizing politicians’ desire to be re-elected by drafting publically supported legislation, suggest that politicians can also use a top-down “mobilization model” of agenda-setting. Here, problems are expanded from the institutional agenda to the systemic agenda (s. Cobb & Elder 1983), in order to mobilize support and gain public acceptance.

Similarly, Dearing & Rodgers (1992) differentiate between the public agenda, the media agenda and the policy agenda. The public agenda contains all the issues for which the public (individual citizens) might undertake action, while the media agenda is comprised of those issues that are presented in the mass media and the policy agenda of those issues that policy-makers devote their attention to.

While the Cobb & Elder (1983) terminology focuses on scope (s. Birkland 2007: 64), the Dearing & Rodgers (1992) terminology highlights different domains. Most crucially, however, both terminologies exemplify the fact that only a fraction of all diffuse societal problems attract political attention. In other words: The number of problems on the decision agenda (Cobb & Elder 1983) or policy agenda (Dearing & Rodgers 1992) is naturally scarce due to the limitations of political institutions with regards to time and resources (Hilgartner & Bosk 1988;

Kingdon 1984). The role the media agenda plays in setting the policy agenda remains contested (Walgraave & van Aelst 2006).

The social construction of policy problems

Following the epistemological assumptions of social constructivism (Berger & Luckmann 1966), there is no such thing as “real” policy problems. Instead, individuals have subjective perceptions of individual and collective problems to be addressed by politics. As such, agendas are the result of social constructions or interpretations of issues (Edelman 1988: 18; Dery 1984; 2000; Birkland 2007) and subject to substantive and institutional complexity (Klijn & Koppenjan 2016). This notion is “almost a commonplace” (Hajer 1993: 44) and “consequential for all subsequent policy stages” (Knill & Tosun 2012: 106).

How do individuals construct problems? Firstly, the social construction of a problem is embedded into traditions, values, experiences and culture and linked to existing social, political and ideological structures (Birkland 2007: 71). Thus, social problems are complex, ill-defined, unique, take place in open, co-evolutionary systems and rely on political value judgements rather than objective measurement (Rittel & Webber 1973: 136; Sabatier 1998). Due to conflicting problem perceptions, issues can at best be re-debated and re-solved but never fully solved and therefore remain subject to enduring renegotiations and discourses. Edelman (1988: 104) states: “If there is no conflict over meaning, the issue is not political, by definition”. A second important factor for individual problem definition is (geographic) affectedness. For the public agenda to turn into policy agenda, a sizable number of the population must be affected and demand action from the government (Cobb & Elder 1983; Knill & Tosun 2012: 119). Thirdly, “opportunities for improvement” (Wildavsky 1979: 42; Dery 2000: 40) are required. To promote a policy problem, actors must offer a policy solution, as Birkland (2007: 71) demonstrates with the example of polio vaccines. Before the vaccine was discovered, polio was a condition people were used to live with, not a policy problem. Only when the vaccine was offering a novel solution, polio became a problem for which policy action was requested.

2.3. Agenda-setting

Defining agenda-setting

If policy ideas are socially constructed, the big question for political scientists is: Why do some ideas make it to the policy agenda, while others do not? The answer lies in the process of agenda-setting. Due to the scarcity of policy agendas, diffuse problems compete for finite political attention. Meanwhile, the bounded rationality and time constraints of politicians, calls

for social movements, interest groups and research institutes to constantly point to social or economic issues in a combination of facts and emotional appeal and offer desired policy solutions from the almost unlimited list of possible solutions (Cairney 2012: 183; Kingdon 1984: 95).

Interest coalitions promote their problem definitions publically, trying to expand their perceived issues to a larger public (Cobb & Elder 1972). Naturally, “the greater the size of the audience to which an issue can be enlarged, the greater the likelihood that it will (...) access to a formal agenda” (ibid. 110). In order to do so, groups “mobilize bias” (Schattschneider 1960). The mobilization of bias refers to the fact that certain claims for/against policy change comply with dominant institutionalized values, rituals and procedures, which in turn make certain groups more likely to attract influential supporters. At the same time, groups that oppose policy change keep competing issues off the agenda, using their own blocking power (Bachratz & Baratz 1962: 952; Gaventa 1980). As a result, some issues are organized into politics while others are organized out (Schattschneider 1960).

Agenda-setting, thus, can be defined as the process by which actors and coalitions “elevate issues on the agenda, or the process by which they seek to deny other groups the opportunity to place issues” (Birkland 2007: 63). A large part of these efforts is done (1) by persuading others to challenge their beliefs on an issue and (2) by encouraging the media to shift attention to certain aspects of an issue. Whether or not policy advocacy is successful, depends on the ability of an actor to bring forward credible arguments, tell a persuasive story, often by making simple emotional appeals (Stone 1989; 2002; Birkland 2007: 72). Arguments can be cognitive, demonstrating the relevance, applicability and coherence of solutions, or normative, appealing to values (Schmidt 2011).

In sum, agenda-setting, ultimately, means persuading other actors to pay attention to one’s held problem perception. Citizens are characterized as “political activists on stand-by who often need to be ignited in order to become politically active” (Hajer 2003: 88). Agenda-setting, therefore, becomes a fight for public and media attention in which media channels, scientific knowledge, framing and other instruments of political communication are used.

Actors: Who is setting the agenda?

To understand which actors are involved in agenda-setting, Schmidt (2002; 2005) differentiates between “coordinative discourses” and “communicative discourses” in which agendas are negotiated. The former refers to an elite discourse of groups at the centre of policy construction. In highly technical fields, such as financial regulation, “epistemic communities”

(Haas 1992) have the power to bypass mass media and exclude large parts of society from agenda setting. The latter means the deliberation of ideas in the general public. In this discourse, agendas are not dictated by a small number of actors but likely to be contested and shaped bottom-up.

As the “coordinative discourse” indicates, the executive and legislative branch usually remain powerful in the process of agenda-setting. Politicians and political parties can prepare draft proposals for the legislative decision-making bodies’ decision agenda. Governments are likely to be biased towards the status quo, reluctant to address a huge number of policy problems and instead sticking to formulated coalition agreements, as long as external pressure is moderate or low (Bachratz & Baratz 1962; Cobb & Elder 1983; Baumgartner & Jones 1993; 2005). Furthermore, it is unquestioned that bureaucrats play an important role in problem formulation (Allison & Zelikow 1971; Hammond 1986; Schnapp 2000). In drafting policy suggestions and overseeing budget allocations, bureaucrats have deep insights into policies. As opposed to the clear separation between government and administration (Weber 1927; Wilson 1887), they might develop and promote their own interests (cf. Niskanen 1971; Dunleavy 1985), leading to “turf wars among competing public organizations” (Christensen & Laegreid 2011: 415) and “the problem of the many hands” (Klijn & Koppenjan 2016: 225).

Additionally, interest groups compete for media attention in order to raise awareness for policy problems, offer policy solutions and mobilize public support. Baumgartner et al (2009) define three forms of lobbying: Inside advocacy, outside advocacy and grass-roots advocacy. The first form, inside advocacy, is mainly used by actors that are well connected with the political representatives via formal meetings and hearings, private contacts or institutionalized advisory functions. Interest groups, using inside advocacy, try to avoid the political debate from becoming public by organizing issues out (Schattschneider 1960: 719). Only a few, influential groups that are considered indispensable for passing the legislation are informed. Outside advocacy, in contrast, is rather used by lesser privileged interest groups. Through media and press releases these groups intend to communicate their message and form opposition to certain policies. With storytelling, lobbying activities and media campaigns every advocacy coalition participates in the “argumentation game” (Fischer & Gottweis 2012), since not participating would involve the risk of being overlooked (Hoppe 2011). Finally, grassroots advocacy refers to the mobilization of supporters. Symbolic, mediatized actions, demonstrations and strikes are used to increase the scope of the conflict and pressure politicians to include certain problems onto the policy agenda. This form of lobbying is typically used by trade unions or environmental and social movements.

In sum, agenda-setting can be done top-down by loosely connected “epistemic communities” (Haas 1992) of elite politicians, bureaucrats and privileged interest groups. At the same time policy formulation can occur bottom-up, especially initiated by social movements and grass-roots organizing (Schmidt & Radaelli 2004: 16-19; Della Porta 2009) or by other, dispersed actors including the companies, research institutes and NGOs.

2.4. The Role of Media in Agenda Setting

Combs & Shaw (1972) in their seminal paper „The agenda-setting function of mass media” suggested that the media sets the public agenda by defining the amount of articles that cover an issue and their position. They moreover, highlighted that the media filters which political statements are covered and which aren't. For this reason, Dearing & Rodgers (1992) defined the media agenda as an independent agenda in between the public agenda and the policy agenda. Media directs attention, promotes and multiplies messages to a wider audience, aligns perceptions and beliefs, provides legitimacy and stimulates the search for innovative solutions, thus, defining policy problems (Cobb & Elder 1972: 52; Strömbäck & Esser 2009; Klijn & Eshuis 2012: 41; Bennett 2012; Klijn & Koppenjan 2016: 198). Modern politics are mediatized (Hajer 2009): The media tells readers *what to think about*.

In turn, the media is employed as a resource by different advocacy groups. “Groups go public with a problem by using symbols and images to induce greater media and public sympathy for their cause” (Birkland 2007; also: Cobb & Elder 1972; Stone 1989; 2002). Greater media attention to a problem, generally, leads to more negative assessments of current policies and increases the urge for policy change (Baumgartner & Jones 1993). As such, media functions as one of the main sources by which external attention and pressure penetrates into policy making (Bekkers et al. 2011: 29).

Instruments of Strategic Communication in Agenda-Setting

We learned that agenda-setting means using one's resources to mobilize support for one's problem perception. Bennett (2012: 124) identifies three instruments of strategic communication: (1) Message shaping, (2) message credibility and (3) message framing. In using the media to build stories and frames around partisan viewpoints, actors, not only tell the audience *what to think about* but also *what to think* (ibid.: 23).

Message shaping: Strategic communication tries to simplify political and societal complexities by offering simple messages (Bennett 2012: 215). The complexity of political problems gets simplified in political narratives (Stone 1989; 2002), storylines (Hajer 1993;

2003; 2005), symbols (Bennett 2012: 128), metaphors (Hajer 2005: 301) and brands (Klijn & Eshuis 2012) in order to make them both emotionally and intellectually accessible to the larger public. Campaigns like Donald Trump's "Make America Great Again" are examples for message shaping.

Message credibility: Strategic communication in the media is especially promising, when linked to sources of authority and credibility (Bennett 2012: 124; Klijn & Koppenjan 2016: 60). Academic findings seem to provide evidence-based, legitimating and authoritative answers (Sabatier 1987; Kingdon 1995; Rich 2004) and are thus used as "ammunition in the struggle for power" (Klijn & Koppenjan 2016: 60). However, academic findings, financed and brought forward by the different parties, often conflict each other. The way science is disseminated leads to polarization (Timmermans & Scholten 2006), especially in technical policy areas where established value judgements are rare (Wood & Vedlitz 2007: 65; Schneider & Leifeld 2009: 140; Hecl 1978: 103). This "argumentation game" (Fischer & Gottweis 2012) ultimately hampers decision-making (Klijn & Koppenjan 2016: 58ff.; de Bruijn and ten Heuvelhof 2008; Nowotny et al. 2001; Hajer 1993: 58).

Message framing: Frames are strategically employed by advocacy groups to structure value conflicts (Goffman 1974; Riker 1986; Stone 1988; Rochefort & Cobb 1995; Baumgartner et al. 2008; Baumgartner & Jones 2010). How a problem is framed and formulated not only contributes to its success in gaining public attention but also pre-defines the policy solutions that might seem feasible or legitimate (Rein & Schön 1992; Cobb & Elder 1983; Hogwood & Peters 1983; Dery 1984). The ultimate aim of framing is "frame alignment" (Rein & Schön 1992): A larger public is supposed to change its perception on an issue according to the frames offered in the media. The framing of tobacco, for example, has changed significantly over the last decades from a popular and elegant product with economic benefits to a public health epidemic – with effects on consumer behaviour and common perception (Cairney et al. 2012). Similarly, Baumgartner et al. (2006; 2008; 2010) show how opponents of the death penalty, that for a long time had been "accepted as normal part of American life" (ibid.: 2006: 1), succeeded in reframing the discourse.

Resources and power in agenda-setting

The concept of power is somewhat ambiguous in agenda-setting literature. Financial power, institutional position power and other traditional explanations for power in political sciences certainly play a role in winning agenda-setting disputes (Dahl 1961; Bachrach & Baratz 1962; Sabatier 1988; Shepsle & Weingast 1987). Birkland (2007: 66) explains that

“more powerful interests are not simply a function of A having superior resources to B, although this does play a substantial role. (...) Rather, the power imbalance is as much a function of the nature and rules of the policy process, as it is a function of the particular attributes of the groups”. However, research on discourses acknowledges that ideas, as symbolic and normative resources, can be more powerful than these traditional operationalisations (Barnett & Duvall 2005: 50). Within this camp, different definitions for power exist. Carstensen & Schmidt (2016: 321) speak of “ideational power”, which they define as the capacity to influence other actors’ normative and cognitive beliefs through the use of ideational elements. Actors might gain or lose power to the extent that their ideas, arguments and discourses have meaning for the audience (Barnett & Duvall 2005: 50; Schmidt 2011: 18). Small NIMBY initiatives or social movements, for example, can, when gaining public attention, can attain more agenda-setting power than resourceful industry groups. Similarly, mobilization power, the ability to obtain support, make legitimate claims and mobilize supporter to demonstrations or other actions, is a prominent concept (Cobb & Elder 1983; Bekkers et al 2010: 4ff.; Klandermans 1984). Ultimately, “(t)he likelihood that an issue will rise on the agenda is a function of the issue itself, the actors that get involved, institutional relationships, and, often random social and political factors that can be explained but cannot be replicated or predicted.” (Birkland 2007: 77).

2.5. Theories on agenda-setting

Several theories, explaining the process of agenda-setting, have evolved. Again, following the claim that ideas deserve more academic attention in policy analysis (cf. Nullmeier 2001: 288; Schmidt 2008; 2010; Carstensen & Schmidt 2016), this paper, firstly, addresses the Advocacy Coalition Framework (Sabatier 1988). Secondly, Hajer’s Discourse Coalition Approach is scrutinized (Hajer 1993), before thirdly, the Narrative Policy Framework (Jones & McBeth 2010) is presented.

2.5.1. Advocacy Coalition Framework (AFC) – Belief systems in policy making

The Advocacy Coalition Framework (Sabatier 1988; 1998; Jenkins-Smith & Sabatier 1993; Sabatier & Jenkins-Smith 1999; Sabatier & Weible 2007; Weible & Sabatier 2005; Weible et al. 2011) is a broad framework explaining policy change in cases where there is goal disagreement and technical dispute between different groups, so called advocacy coalitions. It is one of the most commonly used frameworks in policy analysis (Herweg 2013: 323). The

explanatory strength lies in its conceptualization of belief systems as main explanation for problem definition and policy change.

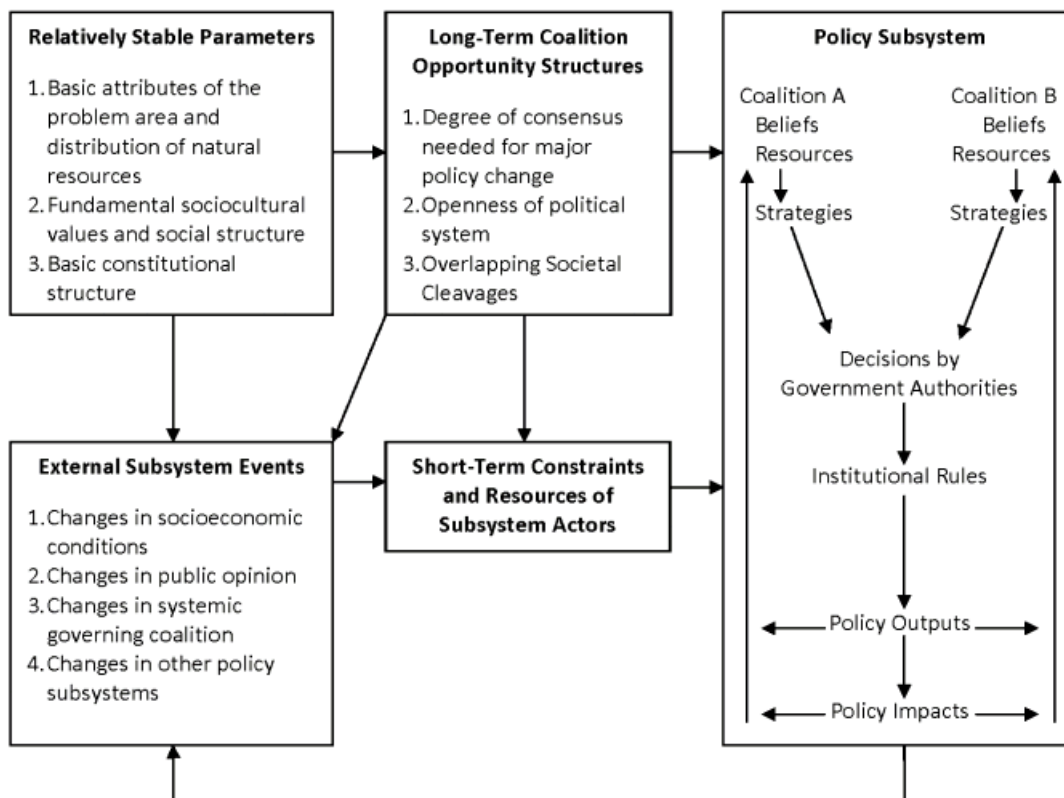


Figure 2: The Advocacy Coalition Framework. Source: Weible et al. 2011: 352.

Figure 2 illustrates the ACF. Starting point is the assumption that around every policy a limited number of advocacy coalitions, comprised of participants that share similar policy core believes and engage in non-trivial degree coordination, form a policy subsystem (Sabatier 1988: 139; Sabatier & Jenkins-Smith 1993: 25; Sabatier & Jenkins-Smith 1999). This specialized subsystem can be understood as an action arena (Ostrom 2011) with defined boundaries in which numerous political actors contribute to a substantive policy. The ACF does not predefine these actors by institutional role or organizational affiliation (Sabatier 1998: 103; Sabatier & Jenkins-Smith 1993: 25). Between the different advocacy coalitions within the subsystem, in-grouping and out-grouping tendencies are assumed, leading to the “devil shift”, an exaggeration of conflict between polarized coalitions (Weible et al 2009: 132). So called policy brokers, trusted by both coalitions, equipped with some sort of internal authority or even hired from outside are mediating between the different advocacy coalitions.

According to the model of the individual the AFC draws, actors do not necessarily act on the basis of rational self-interest. Instead, they simplify social complexity by applying their own stable belief systems and ignoring or combating information that contradicts them

(Sabatier 1998: 107). As such, the AFC incorporates the three basic assumptions of bounded rationality, beliefs and social constructivism presented earlier. With regards to the three belief systems, Sabatier is giving great importance to policy core beliefs as the “glue of coalitions” (Sabatier 1998: 103; Zafonte & Sabatier 1998).

Dominant belief systems are assumed to be the source for problem definition, coalition formation and ultimately the adoption of public policies. Besides belief systems, resource power is acknowledged as a driving factor in defining the action of individuals. Such resources can be formal authority, public opinion, information, mobilization, financial resources and skilful leadership (Sabatier & Weible 2007: 201). The single actors within the sub-system apply strategies (in older ACF versions: “guidance instruments” or “venues”) to promote own policy core beliefs.

As such, agency is an important driver for policy change. In their natural state, subsystems, however, are assumed to be relatively stable over the period of decades with one coalition dominating the other and therefore prohibiting political reforms. Policy learning (Hecl 1974: 306) from the gradual accumulation of scientific and technical information and resulting in enduring alterations of thought, so called “enlightenment” (Sabatier 1991: 148), is seen the main sources for minor change (Jenkins-Smith & Sabatier 1993: 49; Sabatier & Jenkins-Smith 1999; Zafonte & Sabatier 1998). Such change occurs, when the less powerful group’s construction of the problem becomes prevalent.

Major policy change is explained with disjointed changes in extra-sub-systemic conditions, which influence and structure the policy sub-system and constrain the actions, advocacy coalitions can undertake. These systemic factors are divided in two groups. Relatively stable parameters, firstly, include basic attributes of the problem area, basic distribution of natural resources, fundamental socio-cultural values and the basic constitutional structure, meaning the laws and rules that define legitimate and illegitimate actions (Sabatier & Weible 2007: 201). The second category consists of external events that are more dynamic, such as changes in socio-economic conditions, public opinion, governing coalition and policy decisions in other subsystems. These external events shift public attention towards or away from a sub-system, can have massive impacts on the constraints and resources within the system, potentially altering the stable power balances between the advocacy coalitions within the sub-system. The external factors are taken as a given and can hardly be amended by the actors within the system.

Summarizing, AFC is rooted in a positivist tradition, deductively offering systematic, reliable and testable hypothesis for falsification and generalization. Applying ACF to agenda-

setting processes is appealing, as it (1) broadly includes a variety of fragmented network actors, (2) explains the formation of coalitions with policy core beliefs, (3) illustrates the agenda-setting dynamics with the promotion of own policy core beliefs and (4) explains policy change as an alteration of thought.

2.5.2. Discourse Coalition Approach (DCA) – A post-positivist alternative

Hajer's (1993; 1995; 2002; 2003; 2005) DCA is a central contribution to the "argumentative turn in public analysis" (Fischer & Forester 1993). While in the positivist tradition language was seen as a neutral means, Hajer and other post-positivists (cf. Fischer et al. 1993; Fischer 2003; Stone 1989; 2002; Roe 1994) consider language as a medium, through which actors do *not simply describe* the world *but create* it (Hajer 1993: 44; Fischer & Forester 1993: 6). As such, linguistic elements of strategic communication and their use to either (re-) produce relations of dominance or give meaning to complex social phenomena lie at the heart of the DCA.

The investigated processes are public discourses and deliberation. Hajer (1993: 45) defines discourse as "an ensemble of ideas, concepts, and categories through which meaning is given to phenomena." Mostly, different discourses (legal, technological, etc.) overlap in one policy subsystem. In these interactive processes, the central axiom is that statements are positive or negative reactions to historic debates or previous statements of other actors. DCA, hence, acknowledges the role of socio-historic and institutional practices. For the cause of this paper, however, the most important notion about discourses is that they can be constitutive for political "identities of shared preference" (Hajer 2003: 89, 100).

Discourse coalitions are supposed to conceptually link the linguistic analysis of discourse production with empirical socio-political practices (Hajer 1993: 45). A discourse coalition is an "ensemble of a set of story lines, the actors that utter the story lines, and the practices that conform to these story lines, all organized around a discourse" (ibid.). DCA diagnoses a limited number of coalitions, intending to dominate a policy subsystem and convey others of their story lines. In sharp contrast to ACF, however, different actors might form a coalition without "necessarily orchestrating or coordinating their actions or without necessarily sharing deep values". (Hajer 1993: 48; 2005: 305). Instead, the "glue" of coalitions is the alignment of commonly used story lines.

Story lines are highlighted as the "medium through which actors try to impose their view of reality on others, suggest certain social positions and practices and criticize alternative social arrangements" (ibid.: 45). They reduce complexity and replace the rational use of strategies and

resources in coalition formation. It becomes clear that the DCA assumes strategic behaviour and utility-maximization but suggests that discourses transcend conflicts of interest and transport unconsciously held institutions and ideas (Hajer 2005: 298). Similar to the AFC, DCA differentiates between three layers: Story lines (metaphors), policy vocabulary (scientific explanations) and epistemic core beliefs (Hajer 2003: 106).

In this regard, *discourse structuration* occurs when central actors are persuaded by or forced to accept the power of a discourse, while *discourse institutionalization* means that institutional practices are influenced by a discourse to adopt new policies. If both criteria are fulfilled the DCA speaks of dominant discourses. In a case study on acid rain in Britain, for example, Hajer (1993) shows how a new discourse, based on sustainable development, evolves and structures the British discourse on environmental policy.

Summarizing, DCA is not as formalized as Sabatier's heuristic framework. While Sabatier develops empirically testable hypothesis, Hajer conceptualization is suited for inductive case studies and strictly qualitative in design. Post-positivists generally argue that the ACF's broad aggregation into one causal framework excludes micro-context, marginalized groups and the subjective nature of policy (Hajer 1995: 43; Stone 2002: 190). Contrarily, Sabatier (1999; 2000) criticized post-positivists for their lack of clear concepts, testable hypothesis for falsification and empirical standards of reliability and validity. Despite these methodological shortcomings, DCA seems perfectly suited for agenda-setting research. It enables researchers to study (1) the terms (vocabulary, story lines, frames, epistemic notions, regular patterns) of a policy discourse, (2) the formation of rationally motivated coalitions around those storylines and (3) the translation of those story lines into institutional practices. Finally, it embeds the agency-driven process of policy formulation into socio-historic and institutional discourse lines.

2.5.3. Narrative Policy Framework (NPF) – Combining theoretical strands

A third theory, partially bridging the gap between the AFC and the DCA, is the NPF (Jones & McBeth 2010; Jones & Radaelli 2015; Jones, McBeth, Shanahan 2014; Shanahan et al. 2011; 2013; 2014; Schlager & Weible 2013) that understands itself as an independent and holistic framework, capable of explaining the policy process by the power of narratives. NPF argues that post-positivist elements like storylines, narratives and symbols are underrepresented in dominant empirical policy research (Shanahan et al. 2011; Shanahan et al 2013: 455). At the same time, in line with Sabatier (1999; 2000) and other positivists, they demand that research on narratives shall be subject to rigorous empirical testing, validity, reliability and falsification

(Jones & Radaelli 2015). As such, the NPF is proposed as a “quantitative, structuralist and positivist” way to integrate Hajer’s claims, previously “too nebulous to facilitate the empirical investigation”, into a testable framework “that can be clear enough to be proven wrong” (Jones & McBeth’s 2010: 331)

Narratives are the NPF’s central explaining mechanism. A narrative is defined as a story (1) within a setting or policy controversy that contains (2) a temporal sequence of events, unfolding (3) a plot with causal explanations and (4) cost-benefit assumptions, that is populated by (5) dramatic moments, symbols and archetypal characters and culminates in (6) a moral to the story that offers a policy solution (Jones & McBeth 2010: 329-341; Shanahan et al. 2013: 459). Typically, narratives are populated by characters that are idealized to problem-fixers (heroes/allies), stigmatized to problem causes (villains/enemies) or harmed by a problem (victims) (McBeth et al 2005; Ney 2006).

In line with social constructivism, narratives are said to pre-structure political conflicts. They are seen as the primary means by which individuals organize and process information (Jones & McBeth 2010: 330). Nevertheless, intuitive narratives of good and evil are also strategically and intentionally constructed as an accessible and persuasive form of strategic communication (McBeth & Shanahan 2004; McBeth et al. 2007; Stone 2002: 155; Bennett 2012; Ricketts 2007). Ultimately, policies are “translations of beliefs that are communicated through policy narratives” (Shanahan et al. 2011: 540; Green & Brock 2005).

A prominent meso-level application of strategic narrative utilization is McBeth et al. (2007). In line with Schattschneider (1960), they find that coalitions that are losing policy controversies rather expand the issue in order to mobilize additional support, while winning coalitions rather contain the issue to maintain their power monopoly. Linking these findings back to narratives, they claim that losing coalitions are more likely to narratively highlight the costs of a policy (victim narrative), concentrate the benefits on a small interest group (villain narrative) and use intuitive symbols. Winning coalitions, on the other hand, are found to be more likely to concentrate the costs (only few pay), diffuse the benefits (many benefit) and refrain from the use of symbols (McBeth et al 2007). Also the “devil shift” is used more often by losing coalitions (Shanahan et al 2013: 470). In subsystems with evenly competing coalitions both tend to portray themselves as losing side (victims) and others as villains to expand the issue. Shanahan et al (2011: 543) integrate these findings into a NPF model that draws heavily from Sabatier’s ACF (Figure 3).

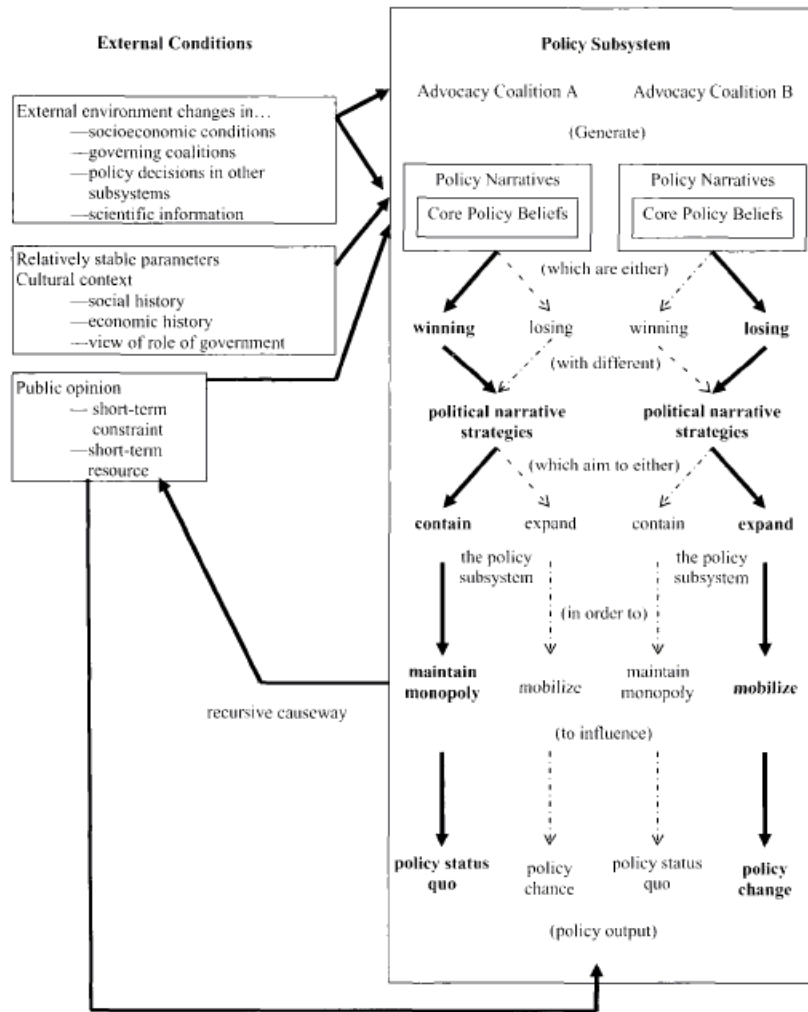


Figure 3: Narrative Policy Framework. Source: Shanahan et al. 2011: 543.

Like the ACF, the NPF assumes that belief systems give purpose to individual and collective action at the coalition or meso-level. While, Sabatier conceptualizes the belief systems as stable over time and only changeable in seldom occasions of policy learning, the NPF advocates narratives as a quantifiable measure for changeable beliefs over time (McBeth et al. 2005; 2010). Narratives can be measured on the basis of their stability (consistency of policy beliefs over time), strength (intensity of narrative use) and cohesion (degree of congruency within or between coalitions). With these three measures - the “coalitional glue” (Shanahan et al. 2011: 548) - inter-coalitional differences and intra-coalitional cohesion become subject to empiric assessment (cf. Shanahan et al. 2013).

3. Research design

3.1. Towards a Conceptual Framework for Discourse Network Analysis (DNA)

This section aggregates the three presented models to a conceptual model. While the theories are partly contradicting, especially with regards to assumed rationality, resource use, stability of belief systems and reasons for policy change, they share many common characteristics. This paper follows the argumentation of NPF scholars that the differences between ACF and DCA can be overcome and integrated into beneficial conceptualizations. Figure 4 represents such a conceptualization.

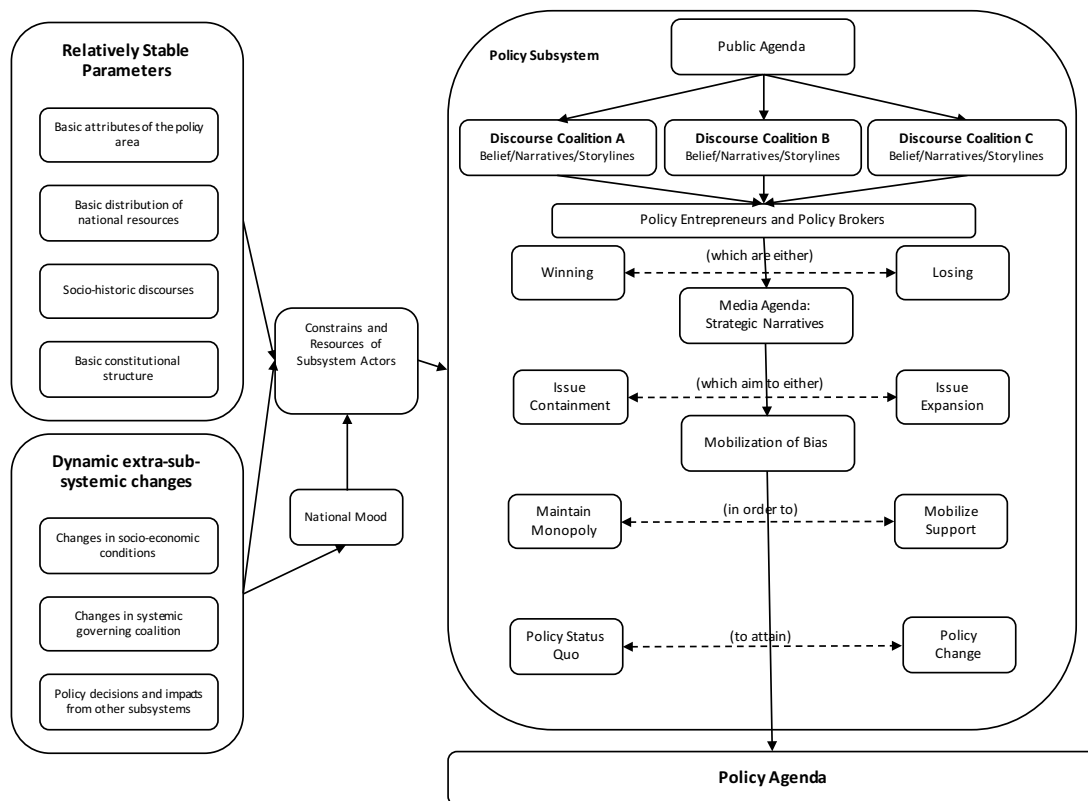


Figure 4: A broad framework of agenda-setting. Source: Own adaption.

Firstly, agenda-setting is negotiated in a *policy subsystem*, defined as an arena with substantial boundaries. In subsystems, struggles for power, support and legitimacy are fought in strategic interactions (Sabatier 1988) or communicative discourses (Hajer 1993; Blyth 2002; Schmidt & Radaelli 2004: 196).

Secondly, policy subsystems are populated by actors, from different segments of society as well as layers of government, blurring the boundaries of political, private and social domains.

Actors, hereby, can be individuals, societal groups, organizations, private firms, politicians, bureaucrats, parties, governments, social movements and interest groups (Kickert et. al 1997; Sabatier 1993; van Buuren et. al 2012).⁶ Policy entrepreneurs and policy brokers are identified as specific roles, actors might play. Policy entrepreneurs, are central actors, who bring forward political demands, attempt to form mass public opinion, catalyse change and build coalitions for reform (Kingdon 1984; Zaller 1992). Policy brokers are mediating forces in conflicts and associated with policy change and less political stalemate (Sabatier 1988: 104). They are trusted by both sides, stand in between the camps with regards to their policy core beliefs and have some decision-making authority (Weible & Sabatier 2007: 128).

Thirdly, historic storylines (Hajer 1993), interchangeable narratives (Jones & McBeth 2010) or relatively enduring belief systems (Sabatier & Jenkins-Smith 1993) are the binding elements for actors to form coalitions. They are socially constructed, subjective and constrain rationality. In this paper, the second layer of belief systems, policy core beliefs form the main object of investigation. They are empirical, partly normative beliefs about one specific subsystem that are resistant to change. Policy core beliefs are the “glue of coalitions” (Zafonte & Sabatier 1997). All three theories agree on the existence of discourse coalitions⁷ and the notion that at a certain point in time, a (winning) coalition dominates the subsystem and the other (losing) coalitions.

Fourthly, in all three models, these coalitions fight for desired policy outcomes, instrumentally using strategic communication, information, resources, storylines and/or narratives. In terms of Dearing and Rodgers (1992), the use of these instruments brings ideas from the public agenda to the media agenda. In the interactive process of discourse within the subsystem, therefore, the media agenda is seen as distinct from but interconnected with the policy agenda. It plays a catalysing role for setting the policy agenda, especially through public opinion-forming and the mobilization of bias.

In line with NPF and building on Schattschneider (1960), the interactive process of discourse in setting the policy agenda follows a certain logic. Coalitions and policy entrepreneurs that seem to be on the winning side of a discourse have strong incentives to contain the issue. They mobilize bias, that is, they actively suppress the distribution of alternative ideas by reinforcing dominant institutionalized values, rituals and procedures. The strategy hopes to organize alternatives idea out of politics, avoid them from reaching agenda

⁶ As such policy subsystems come close to definitions of network governance (Scharpf 1993: 71). Government, in this set-up, has a strategic, regulative and moderating role, rather than having unrestrained control over policy formulation.

⁷ From now on, this paper will use Hajer’s term discourse coalitions, „arguably the most general way of conceiving of discursive coalitions” (Schmidt & Radaelli 2004: 14), simultaneously for the term advocacy coalition

status and maintaining the own ideological monopoly. The ultimate goal for winning coalitions is to attain the status quo. Losing coalitions, in turn, follow a contrasting logic. They expand issues and link them to other existing problems or conflict lines in order to mobilize additional support. With new arguments, narratives and storylines, they try to reach actors that formerly were not involved or impartial and “who often need to be ignited in order to become politically active” (Hajer 2003: 88). Consequently, they intend to organize new issues into politics to attain policy change.

Fifthly, this paper analysis agenda-setting. Consequent stages in policy-making (policy change, implementation, evaluation) are not researched. Thus, the dependent variable is the policy agenda. All theories assume a causal link between the interaction or discourse in the subsystem and policy. ACF assumes extra-sub-systemic effects to be most important for major policy change but acknowledges the role of policy learning, resulting in enduring alterations of thought, for minor change. DCA explains changes in the policy agenda with discourse structuration and institutionalization and NPF with the strength and cohesion of narratives. The policy agenda, in this research, is defined by the limited number of policy problems that are actually taken over by politicians.

Moreover, in all three theories, the subsystem is effected by stable characteristics and dynamic environmental changes, such as socio-historic and institutionalized discourses (Hajer), constraining actors in their resources and behaviour (Sabatier), while shaping ideas and discursive interactions in the subsystem (Schmidt 2008; 2010).⁸ The different elements identified by the three theories are visualized on the left-hand side of Figure 4. While institutionalists and other scholars (Hay 2006; Schmidt 2011; Giddens 2000) argue that these elements should be object of inquiry, ACF, NPF and DCA acknowledge their influence on policy-making but define them as out of the of the subsystem actors’ influence. However, during so called windows of opportunity (Kingdon 1984; 1995), actors might make use of external events. Policy windows refer to moments of change, such as elections, military coups, etc., offering policy-entrepreneurs the timely-limited chance to push an issue forward and couple it with a solution in order to gain agenda status. Policy windows, hence, represent an element of contingency in the agenda-setting process (Cairney & Zahariadis 2016). In this context, focusing events (Birkland 1998; Baumgartner & Jones 1993; Cobb & Elder 1983; Kingdon 1995), focal, sudden, relatively rare, attention-grabbing events, like natural disasters, or changes

⁸ Here a link could be drawn to institutionalism (cf. Hall & Taylor 1996; Pierson 2004; Lowndes & Roberts 2013) and the fundamental debate on the relation between structure and agency (Giddens 2000). For reasons of scope, this paper cannot go into these depths.

in indicators (Birkland 2007; Cairney & Zahariadis 2016), like changes in unemployment rate, inflation rate, pollution levels or death rates play an important role.

A slimmer conceptual model, more suited for practical research (Figure 5), assumes these factors to be constant and focuses the paper’s research endeavours on the discourse *within* the subsystem. Here, actors use ideational elements (discourse, narratives, storyline) to influence the media agenda, shape other actors’ normative and cognitive beliefs and ultimately attain or prohibit changes in the policy agenda.

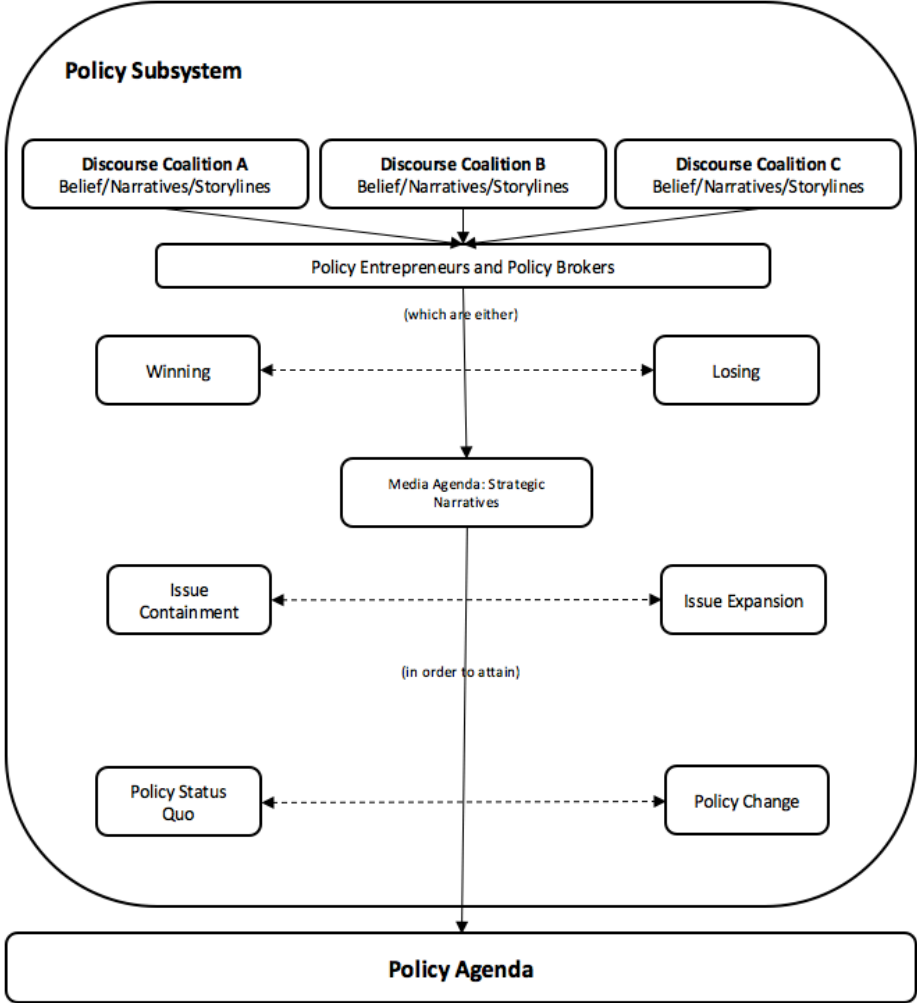


Figure 5: Conceptual Model. Source: Own Adaption.

Obviously, the media agenda is not the only way by which policy entrepreneurs and advocacy coalitions try to influence the policy agenda. Agenda-setting research names various possibilities. Especially, the role of informal, closed networks in epistemic communities (Haas 1992), iron triangles (Hayden 2002), issue networks (Hecklo 1978) and other forms of intertwinement of politics and lobbying (Baumgartner et al. 2009) aim at bypassing the very process of discourse and public opinion-formation. An observant reader would, thus, remark that a direct link between discourse coalitions and policy agenda is missing in the model. These

forms of “inside advocacy” (Baumgartner et al. 2009), however, are deliberately not covered by this thesis. Instead, it explicitly focuses on public discourses in the media in order to explain the process of agenda-setting.

3.2. Operationalization and Coding Scheme

In order to make the presented conceptual framework researchable, in this section the different variables are operationalized into measurable indicators. Figure 6 summarizes the operationalization of key variables.

Variable	Definition	Analysis	Indicator
Policy Subsystem	Around every policy a limited number of advocacy coalitions, comprised of participants that share similar policy core believes and engage in non-trivial degree coordination, form a policy subsystem (Sabatier 1988: 139; Sabatier & Jenkins-Smith 1993: 25; Sabatier & Jenkins-Smith 1999). In this paper, policy subsystem is synonymous with the term network.	Inductive Qualitative	The sum of all actors $a \in A = \{a_1; a_2; \dots; a_m\}$
Media Agenda	The sum of all policy problems and solutions in the media, brought forward by actors regarding the identified seven main discourses. In line with Dearing & Rodgers (1996) and Walgraave & van Aelst (2006: 104), the media agenda is defined as distinct from but interconnected with the policy agenda. The media agenda can be strategically employed by discourse coalitions that want to “go public” (Birkland 2007; also: Cobb & Elder 1972; Stone 1989; 2002).	Inductive Qualitative	The sum of all concepts derived from the media content analysis $c \in C = \{c_1; c_2; \dots; c_n\}$
Policy Entrepreneur	Micro- and meso-level actors who bring forward political demands, attempt to from mass public opinion, catalyse change and build coalitions for reform (Kingdon 1984; Zaller 1992), who are connected with the political stream and create acceptance and legitimacy for policy solutions within expert communities (Kingdon 1995).	Deductive Qualitative/ Quantitative	Actors ($a \in A = \{a_1; a_2; \dots; a_m\}$) with degree scores of 0,75 and higher
Policy Broker	Micro- or meso-level actors that stand in between the coalitions with regards to their policy core beliefs and have some decision-making authority (Weible & Sabatier 2007: 128).	Deductive Quantitative	Those actors ($a \in A = \{a_1; a_2; \dots; a_m\}$) with betweenness scores of 0,04 and higher.
Discourse Coalition	Coalitions of actors that share similar policy core believes and engage in non-trivial degree coordination (Sabatier & Jenkins-Smith 1993). Coalitions that use the same storylines/narratives and conform to them (Hajer 1993; Jones & McBeth 2010).	Inductive Quantitative	Derived from cluster analysis: Cliques of actors with high clustering coefficients for concepts $c \in C = \{c_1; c_2; \dots; c_n\}$ (=cohesive groups)
Winning and Losing Coalition	Winning coalition: The coalition that is supported by the majority of actors. Losing coalition: The coalition that is supported by the minority of actors.	Inductive Quantitative	Derived from cluster analysis: Cliques of actors with higher/lower a , where: $a \in A = \{a_1; a_2; \dots; a_m\}$
Policy Agenda	The sum of all issues from either the public or media agenda that are taken on by policy-makers (Baumgartner & Jones 1993; Cobb & Elder 1971; Kingdon 1984; Walgraave & van Aelst 2006). Walgraave & Van Aelst (2006: 104) offer “political configuration” as one of the explanatory factors for political adoption on the policy agenda.	Qualitative	Policy problems that are included into the official 2014 EEG amendment.

Figure 6: Overview: Operationalization of key variables. Source: Own adaption.

The aim of DNA’s qualitative content analysis is to code for statements, consisting of five elements: An actor, an organizational affiliation, a concept, a binary information about support or opposition and a time stamp.

3.2.1. Actors and policy subsystem

One of this paper’s research endeavours is to identify and cluster actors in the discourse on German energy politics. Therefore, the first step in qualitative network analysis is to define the boundaries of the researched network (Wassermann & Faust 1994: 51). Laumann et al. (1983) propose two possibilities for boundary specification: (1) The position method that defines the relevant network actors based on their institutional positions and (2) the realistic method that includes all actors, regardless their institutional position. This paper aims to draw an exhaustive and holistic picture of the actors involved in the discourse, regardless their

affiliation to political institutions, issue networks (Hecló 1978), policy communities (Wright 1988), interest groups with veto-power (cf. Tsebelis 1990) or other intermediary actors of network governance (Aurenhammer 2016: 35). Therefore, the realistic method without ex-ante specification is chosen. The subsystem is conducted inductively. In the content analysis, the coded actors (a) are only a fraction of all political actors (A) and naturally limited to those who promote political interpretations and solutions publically, with

$$a \in A = \{a_1; a_2; \dots; a_m\}$$

A general distinction can be made between meso-level and micro-level actors. In line with Leifeld (2009), only actors that can be linked to an organisation are coded. Thus, meso-level actors shall be the examination unit of this paper. However, the coding procedure is actor-centred. The dataset, hence, allows for more fine-grained micro-level analysis, where fruitful. This brings certain advantages.

Firstly, the meso level of German energy politics can be illuminated. Complex decision-making is made up of micro-processes that are embedded into meso-structures, whose aggregated dynamics lead to changes in the macro-structure (Marsh 1992; Coleman 1990). Different statements of actors of the same organization (e.g. socialist party) are aggregated to organizational policy preferences, allowing to map the seldom researched meso-level. I argue that, when speaking publically, stakeholders do not state their *individual* policy preferences. Instead, they represent a certain organization (party, company, interest group, etc.) and act on its behalf.

Secondly, by excluding actors that cannot be linked to a (political) organization, over-complexity in the network is avoided. Media, due to the biases of personalization and fragmentation (Bennett 2012: 44-71), often depict politically irrelevant actors (e.g. local farmers, inhabitants) and report their opinions and feelings about an issue. This might function well to illustrate a certain situation to the wider public, however, the presented actors are highly unlikely to have the resources and political power to affect policy agendas and outcomes. While micro-mobilization in some cases can have an influence on policies (Bekkers et al 2010; Bimber 2003), several authors argue that in order for micro-mobilization to be successful, loosely structured local actors have to connect themselves to intermediary organizations operating at the meso level (Gerhards & Rucht 1992, McAdam 1998). “These organizations provide a platform for discussion and debate, (...) synthesize specific grievances in relevant political opinions, and support negotiation processes” (Bekkers et al. 2010: 5).

Policy entrepreneurs are those actors who make use of changes in indicators, policy windows and focusing events to promote novel policy solutions (Kingdon 1995). They are

central to opinion formation. Network visualizations do not resemble “centrality”. There is no agreement as to what exactly centrality is (Freeman 1979), but, in general it expresses structural advantage, importance, or dominance. (Hennig et al. 2012: 124). Graph theory developed different measures for the centrality of single nodes. As, by definition, policy entrepreneurs are well-connected within coherent political communities, they can be qualitatively identified by their *degree* scores. The higher the degree score for a particular node, the higher the number adjacent links with other nodes in the network, meaning that they share more policy core beliefs with their coalition members. To account for different network sizes, degree is usually standardized by dividing the resulting value by the number of possible links. In graph theory, nodes with high degree are central and influential actors.

Policy brokers, in contrast, are intermediary actors that mediate conflicts and facilitate policy change (Sabatier 1988:104). By definition, they are trusted by different coalitions, stand in between the camps with regards to their policy core beliefs and have some decision-making authority (Weible & Sabatier 2007: 128). They can be quantitatively identified by their *betweenness* scores. Betweenness, for every particular node, measures how often the node is placed on the shortest intermediary path between two other nodes. Granovetter (1973) in this respect speaks of the “strength of weak ties”. In graph theory, nodes with high betweenness are connecting different coalitions and facilitating the information flow over structural wholes and have the potential to disconnect graphs when removed.

3.2.2. Concepts

Political discourses are debates among political actors about a given policy in which the actions are triggered interactively by actions from other network actors (Hajer 1993). Political actors make public claims about which policy instruments they deem useful. In this context, concepts are “a neutral word for policy beliefs, preferences, justifications and so forth at the content level” (Leifeld 2015: 4). Concepts are often defined as Sabatier’s (1988) policy core beliefs (Leifeld 2015: 5; Nagel 2015). They involve very salient beliefs, are geared towards future policy-making and can be operationalized as normative beliefs regarding policy instruments. The use of concepts in the subsystem might change over time in line with political and economic tides but also due to strategic behaviour and learning processes. Operationalized that way, in the content analysis, the coded concepts (c) are only a fraction of all concepts in the media (C).

$$c \in C = \{c_1; c_2; \dots; c_n\}$$

In this thesis, political discourses are measured on the basis of their occurrence in the media. Ultimately, they are quotations of political stakeholders with regards to which policy they deem favourable. For example: “Off-Shore wind parks should replace nuclear energy”. In total 461 concepts have been identified during the coding process (s. codebook for examples). Concepts are manually coded for in newspaper articles (more detailed later). At the same time, a cluster of concepts can be aggregated to a category in order to analyse frames, narratives or storylines in the sense of NPF or DCA (Leifeld 2009: 391; 2015: 4). Such an application can be found in Nagel (2015), who operationalizes Hajer’s (1993) discourse coalitions as high-level frames (ecologic frame, health frame, etc.).

3.2.3. Statements

Statements are made in the interactive process of discourse in order to address the general public or a selected target audience (Hajer 1993: 45). The central axiom is that statements are “positive” (actor affirms certain concept) or “negative” (actor rejects certain concept) reactions to past debates or previous statements of other actors, modelled as dichotomous variable (r) with only two possible values (1=positive and 0=negative). In the content analysis, the coded statements (r) are only a fraction of all statements in the media (R) and limited to those who concern energy politics, with

$$r \in R = \{r_1; r_2; \dots; r_n\}$$

A statement is defined as a public, “verbal or written expression of discontent with a policy or in favour of a policy” (Leifeld 2016: 2) and is directly linkable to actors (Leifeld 2013; Fisher et al. 2013). Statements might contain problem formulations, preferred policy instruments or policy solutions., as well as metaphoric frames, narratives and popular storylines. Ultimately, the existence of discourse coalitions is an expression of cross-sectional clustering around similar statements. During coding, only text passages that contained direct or indirect quotes of actors were marked as statements. Editorial interpretations or opinions of journalists were omitted (Leifeld 2009: 393).

In order to illuminate adaptive changes over time, every statement needs to be assigned a time stamp (Leifeld 2013; 2016). While for other research, more nuanced time definitions might be needed, this paper coded the statements by the day they were made. In this paper time is modelled as a discrete variable (set of time steps, here: days) with:

$$T = \{t_1; t_2; \dots; t_n\}$$

4. Methodology

4.1. Strategy: Case Selection

As mentioned in the introduction, this paper is designed as a longitudinal case study on German energy politics. Case study designs are common in political science (Gerring 2004). The rationale behind conducting case studies is that the researcher is enabled to study the selected cases in depth. Case studies can be designed both qualitatively and quantitatively. However, the majority of case-based research is designed qualitatively on the basis of expert interviews or field research. Logically, case studies are not as readily generalizable as large-n quantitative research designs.

The case study design was chosen, as, due to the extensive coding procedures required in DNA, a comparative case study or even a large-scale cross-national comparison would have required much more resources (time and coders). The data presented in this paper, however, is extensive. In fact, the data set constitutes the largest DNA sample on German energy politics the author is aware of. Thus, it entails numerous new findings that can only be presented in an appropriate manner, when presented as an in-depth case study.

The case of Germany's energy transition was selected because it offers ideal conditions to perform a DNA. The "Energiewende" is likely to be the major political project carried out in Germany nowadays. As such the media coverage on Germany's "man-on-the-moon-mission" (Steinmeier in Morris & Jungjohann 2016: 9) is immense. The cross-sectoral character of the project, introduces additional complexities and conflict lines and makes the case a textbook example for network governance. As Germany is one of the pioneering countries in performing a drastic energy transition from fossils and nuclear to renewables worldwide, the case study has implications that go beyond German policy-making. This paper, thus, intends to offer insights that can be of interest for international decision-makers and scholars of comparative public policy alike.

4.2. Methods: Descriptive Models of Discourse Networks

This chapter gives an overview of the state of the art in network research and introduces to a variety of operationalisations and methods of network analysis. It explains the necessity for more culturalistic and mixed-method approaches in network analysis - two claims that build the foundations for DNA, the method used for this paper's case study (further explanation in 4.3.). The argument that is being made is that, building on political perceptions and a mixed-method

approach, DNA is the most fruitful method to systematically analyse the structure and composition of networks and their dynamics over time from media content.

Operationalisations in network analysis

In a nutshell, network analysis is producing and analysing “relational data” (Edwards 2010: 6). The underlying axiom is that whom a person is connected to and how they are connected to each other effects access to resources, opportunities and constraints (Granovetter 1973; Burt 2005). Network visualisations build on graph theory (cf. Harary 1969) and are made up of nodes and links (Jansen 1999: 52). Nodes usually represent an element of a certain entity (e.g. actors), while links represent a relation between two nodes (e.g. exchange of resources, information, communication or knowledge). Links can be undirected (e.g. common membership) or directed, containing additional information about the relation between the nodes (Aurenhammer 2016: 35). In the case of information flow networks, for example, information might only flow from node n_1 to the node n_2 but not vice versa. If a link only represents the existence of a connection, it is defined as binary, while weighted links indicate the intensity of the relation. In social sciences, the main research interest of these “relational” studies are social relations between actors (existent/non-existent; strong/weak).

Network analysis is prominent in different scientific disciplines. As a matter of fact, the method is widely used in biology, ecology and computer sciences, while its application in political sciences remains limited and disputed (cf. Dowding 1995; 2001; Kenis & Schneider 1991; Raab & Kenis 2006). Nevertheless, ever since political scientists conducted the first seminal policy network analysis in the 1970s (e.g. Laumann & Pappi 1976)⁹, the method has expanded within the field (Lang & Leifeld 2008: 223; Leifeld 2009a), leading to a “Babylonian variety” (Börzel 1998: 253) of conceptualizations.¹⁰ Network analysis is ‘no theory in stricto sensu’ (Kenis & Schneider 1991: 44) but rather a method that has to be combined with (meta-) theoretical foundations to generate hypotheses (Börzel 1998: 263ff.). Lang & Leifeld (2008) identify five different theoretical strands in network analysis (Figure 7).

⁹ s. Scott 2012 for a historical overview

¹⁰ Classifications can for example be found in Kenis & Schneider (1991: 25); Brandes & Schneider (2009); Klijn (1997); Windhoff-Heritier (1993); Schneider (2009: 13ff.).

Theory	Relation based on	Methods	Analysis
Resource Exchange Theory	Resource Exchange	Centrality, Block models	Policy Outcomes
Elite Theory	Contact, Membership	Centrality, Cluster analysis,	Cohesion, Participation, Prestige
Social Capital	Contact, Membership	Density, Cluster analysis	Cohesion, Participation
Interest Mediation/ Governance	Resource Exchange, Contact	Centrality, Density, Block models	Hierarchy, Market, Influence
Culturalistic Theories	Cooperation, Conflict, Believes, Idea, Transfer of Ideas	Centrality, multidimensional scaling, correspondence analysis	Perceptions, Ideas, Diffusion, Learning, Relational Equivalence

Figure 7: Different theories and their implications for network analysis. Own adaption based on Lang & Leifeld 2008: 237, Jansen 1999

(1) In social exchange theory, social relations essentially are interest- and power-based exchange processes (money, communication, information, trade flows) that define policy outcomes and can be analysed with the analytical tools of network analysis. Methodologically, most studies operationalize networks of corporative actors and focus on case studies within a single policy area instead of generating hypothesis (Downing 1995: 142; Börzel 1998: 258)

(2) Elite theory is interested in political and economic elites (cf. Dahl 1961). Methodologically, studies conduct their research on the micro-level and are less in structural interconnectedness of elite actors (family bonds, friendship, common membership).

(3) In social capital theory (cf. Putnam et al. 1993) networks are an independent variable explaining phenomena such as trust, political satisfaction and political participation. Methodologically, ego-networks around a researched micro-level unit are common.

(4) Governance studies focus on the triangle of state, market and civil society. Networks in this research traditions are understood as (another) particular form of governance, a coordination mechanism or analytical model with its own operational logic (Mayntz 1991; 1993; Le Gales 1995; Kenis & Schneider 1991: 36; Scharpf 1993; Streek & Schmitter 1996). Studies are diverse in methodology but mostly have a structuralist focus investigating the performance of network structures rather than the influence of single actors (Brandes & Schneider 2009: 49).

(5) Finally and most importantly for this paper's research endeavour, Lang & Leifeld (2008) identify culturalistic theories that describe policy-making as processes of knowledge production, argumentation and learning. Political ideas partly replace functional interdependencies and economic rationalities as the main explanation for cooperation and

policy outcomes (Zafonte & Sabatier 1998; Weible & Sabatier 2005; Schneider & Leifeld 2009: 408-9). These ideas are not fixed but subject to procedural change and evolution on the basis of new information, positioning of prestigious actors, communication, predominant narratives and socialization. Especially, the studies by Hecló (1978) on “issue networks”, Haas (1992) on “epistemic communities” and Sabatier & Jenkins-Smith (1993) on “advocacy coalitions” are named. Since 1998, a trend towards culturalistic theories can be observed (Leifeld 2009). A turning away from mere rational choice approaches and neo-institutionalism is diagnosed for policy-analysis in general (Nagel 2015: 71; Nullmeier 1993; 2001): ‘Not only do ideas, beliefs, values identities and trust matter in policy networks, they are constitutive for the logic of interaction between the members of a network’ (Börzel 1998: 264).

Quantitative and qualitative network analysis

Another basic differentiation can be made between quantitative and qualitative network analysis (cf. Marin & Mayntz 1991).¹¹ For Crossley (2009: 6) quantitative network analysis aims at exploring “relational form”, while qualitative network analysis aims at exploring “relational content”. Increasingly, the combination of quantitative and qualitative network analysis is proclaimed (Edwards 2010: 14; Lang & Leifeld 2008: 235).

Due to technological innovations in computing, quantitative network analysis currently dominates network studies (Edwards 2010). On the basis of graph theory, quantitative network analysis measures social structures by simplifying social relations into numerical data, offering quantitative indicators such as density, centrality (degree, closeness, betweenness), brokerage, closure, cores, cliques and blocks. The networks can then either be conducted as an “ego-network”, of an individual “ego” towards its “alters” (cf. Wellman 1990), or from a “network perspective” of all actors (Scott 2000: 13). Further, quantitative methods make use of mass surveys (Wellman 1979), cluster analysis (Jain & Dubes 1988), block modelling (cf. White et al 1976; Lovseth 2004) and multidimensional scaling (Weible & Sabatier 2005). The latter aim at identifying coalitions or blocks within the network. Quantitative social network analysis is powerful in mapping and measuring certain aspects of social relations systematically. The main strength lies in the analysis of structure in stable and well-established networks. However, “these tools (...) by themselves fail ultimately to make sense of the mechanisms through which (...) relationships are reproduced or re-configured over time” (Emirbayer & Goodwin 1994: 1446-7).

¹¹ An extensive, comprehensive and highly recommended overview of both methods and the possibilities of combining them can be found in Edwards (2010). This section builds heavily on her literature review.

Qualitative network analysis, in contrast, are less interested in the structure of network interactions than in their quality, content and dynamics (emergence, reproduction, variability). Examples for research interests are social groups (communities, coalitions, neighbourhoods, kinship and friendship) but also subjective perceptions and meaning (preferences, action-defining orientations and the individual understanding of social reality) (Hollstein et al. 2006). Methodologically, qualitative studies can be designed as observation, (semi-structured) in-depth interviews content analysis, media/discourse analysis and ethnography. Thus, the strength of qualitative designs lies in the provision of context and causal interpretation that quantitative studies are unable to provide (cf. Crossley 2008) One of the main criticisms, is the focus on ego-networks, providing an “insider view”, rather than conduct the whole network structure from the “outsider view” (Edwards 2010: 18).

	Quantitative Network Analysis	Qualitative Network Analysis
Key interests	Structure	Processes and changes
Measured in	Existence of relations Frequency of relations “relational form”	Content of relations Quality of relations “relational content”
Methods	(Mass) Surveys Cluster analysis Block modelling Multidimensional scaling	Ethnography Observation Interviews Content analysis
Most efficient in	Stable networks	Dynamic networks
Linked to	Resource Exchange Theory Elite Theory Social Capital	Culturalistic Theories

Figure 8: Quantitative and qualitative network analysis compared, Source: Own adaption

4.3. From Discourse Analysis to Discourse Network Analysis – A new Approach to analyse Discourse Networks

To accommodate to the claims for more culturalistic theories (Lang & Leifeld 2008) and mixed-method designs, this paper is conducting a Discourse Network Analysis (DNA). This chapter introduces to this novel method and explains, why DNA is a fruitful addition to the prominent techniques in network analysis.

To date, not many studies are systematically trying to link frames and ideas to those political actors using them (Steensland 2008: 1031). DNA is an innovative and relatively novel

approach to network analysis that conducts networks on the basis of shared idealistic concepts and policy beliefs. Yet a number of applications in political sciences have been undertaken (see Leifeld 2015: 13; Leifeld 2009b; 2013; 2013b; 2014; 2016; Nagel 2015). Methodologically, DNA is a “multi-method” (Nagel 2015: 115), a combination of qualitative elements of discourse analysis and quantitative research techniques of social network analysis, which “enables researchers to explore the structure of networks from an outsider’s view and the content and processes from an insider’s view” (Edwards 2010). Quantitative and qualitative methods (summarized in Figure 8) are not exclusive but can well be combined (cf. Pappi 1993; Edwards 2010; Crossley 2009). Combining them might be “mutually informative” (Edwards 2010: 14; Lang & Leifeld 2008: 235) and add to the triangulation of research endeavours.

Coding

In its first step, the coding of documents or discourse, DNA is qualitative. Political discourse analysis (PDA), an interdisciplinary research field rooted in linguistics but open to methods from other disciplines, is defining language as the strategic resource whereby (political) processes over power are decided (Hudson 1978; Dallmayer 1984; Edelman 1988; Pelinka 2007). There is no general, standard methodology for PDA (Keller et al. 2006: 107; Nagel 2015:116) but PDA is guided by the premise that “politics cannot be conducted without language and it is probably the case that the use of language in the constitution of social groups leads to what we call politics in a broad sense” (Chilton & Schaffner 1997: 206). As such, it analyses the use of language in public speeches, party programs or publications of political actors. Content analysis is one of the most traditional applications of ACF (Sabatier 1987: 664; Jenkins-Smith et al. 1991) and in fact argued to be the only viable way of measuring advocacy coalitions over longitudinal periods (Leifeld 2013: 172).

In this thesis, political discourses are measured on the basis of their occurrence in the media. The selected newspaper articles were manually coded for actor statements by the members of the research project (s. Appendix), as coding all 4097 articles would have exceeded the capacities of an individual coder. A total of 15 project members were involved in the coding process. Some content analysis tools allow for (semi-)automatic coding. For this paper’s research interest, however, these programs are not yet coding reliably and manual increases the overall coding quality (Nagel 2016: 123).

As the research project is based in Germany and German newspapers are coded, the categories and concepts coded for, as well as the quotations that will be presented in the analysis part of this paper, are in German. Where translations were necessary, these translations were

performed by the author. During the initial coding, a detailed code book was developed to document the introduction of new categories. Deriving from that code book, this paper identified seven main discourses with regards to domestic energy production and provision, namely financing, renewables, fossil fuels, decentralization, economic impacts, grids and policies (for more details s. Analysis section).

Visualization

In its second step, the visualization process, DNA, combines these qualitative elements with quantitative elements of social network analysis, analysing actor positions and network structure with descriptive statistics (e.g. centrality, density) and visualising network data on the basis of graph theory. Software aggregates the information and allows for the different network transformation (cf. Leifeld 2015).

Transforming nodes and links: Congruence, conflict and affiliation networks

Graphs and matrixes are mathematical models that visualise networks. A network graph consists of a non-empty set of nodes N ($N = (A_1; A_2; \dots; A_n)$) and links L (for the case of three interconnected nodes: $L = (\{a_1 a_2\}; \{a_2 a_3\}; \{a_1 a_3\})$). Depending on operationalization and research interest, different graphs might be chosen to model the network content (Leifeld 2009: 394). In the case of this paper, two undirected and weighted networks, congruence- and affiliation network, are of importance.

A basic differentiation can be made between one-mode networks and two-mode networks (Wassermann & Faust 1994: 299ff.). One-mode networks, derived from adjacent matrixes, visualize a single entity of nodes (e.g. only actors), their connections and co-occurrence. Two-mode networks, derived from affiliation matrixes, are usually visualized in bipartite graphs that map the affiliation between two entities (e.g. actors -> concepts). In contrast to one-mode networks, in these graphs, elements of the same entity (e.g. concept-> concept) cannot be directly connected.

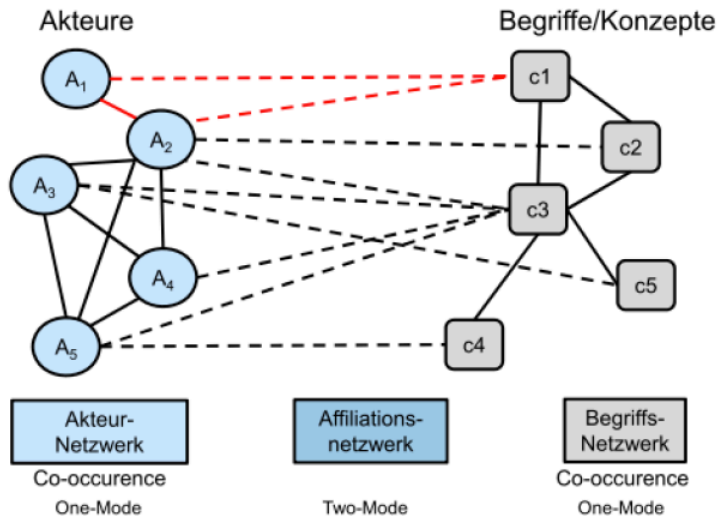


Figure 12: Schematic visualization of one-mode and two-mode networks. Source: Janning et al. (2009).

Figure 12 schematically illustrates the before said. The dashed links represent the two-mode network. Two *affiliation networks* ($G_{r,t}^{aff} = (A, C, L_{r,t}^{aff})$) illustrating either the agreement or disagreement of political actors (A) to concepts (C), can be generated. The dashed lines in Figure XX, illustrate the single statements (l) at a specific point in time (t) and in positive or negative relation (r), where:

$$l_{r,t}^{aff} \in (a, c)L_{r,t}^{aff}$$

and $L_{r,t}^{aff}$ denotes the set of all possible links. The graph $G_{r,t}^{aff}$ is, thus, called bipartite, as its nodes can be partitioned into two sets.

While affiliation networks contain most information, a trade-off exists between mapping as much information as retained from the newspaper research and remaining a certain level of comprehensiveness. The intertwining of two layers lets affiliation networks (two-mode networks) quickly become too complex to infer any systematic meaning from them. To overcome this disadvantage, one-mode (or: co-occurrence) networks are used. The “actor network”, visualized by the solid lines on the left half of Figure 12, is a network in which actors are visualised as nodes and connected by a link, if they agree on a concept. The actor network is, thus, a *congruence networks*. In this paper, the actor network indicates how similar single actors are, based on their shared policy believes articulated in the discourse. The link weight specifies the strength, intensity or capacity of these links and allows for the calculation of descriptive statistics (Barrat et al. 2004; Horvath 2011). For every time two actors share the same position on a concept (e.g. both agree) the link weight of their link increases by 1. The link weight can, thus, be interpreted as a measure of similarity in the discourse. The definition

captures concept agreement and prevents actors from ending in the same coalition by being attached to the same concepts but with opposite stances (Leifeld 2016: 8). Actors are seen the more similar, the more concepts they can agree on – or the higher their link weight is (Leifeld 2013: 176). As a result of the before said, a group of interconnected (and therefore cohesive) nodes can be understood as a discourse coalition sharing certain policy preferences. Only few links between two groups of nodes indicate differences with regards to policy preferences. In mathematical terms, the link weight in the actor network is given by:

$$w_t(a_n, a_{n-1}) = \sum_{r=1}^2 \left| N_{G_{r,t}}^{aff}(a_n) \cap N_{G_{r,t}}^{aff}(a_{n-1}) \right|$$

where $N_{G_{r,t}}^{aff}$ denotes the neighbouring nodes of a_n in the resulting network graph (G). Those nodes are defined at a specific point in time (t) and in positive or negative relation (r).¹² The calculation is done for common agreement (r=1) and common disagreement (r=0), respectively and summed up. The link weight can either be illustrated numerical or visualised by adjusting the strength of the links in the network. Moreover, normalizing the data retrieved from media analysis before visualizing it, is essential for gaining representative coalition outputs (Marschall 2009: 121; Leifeld 2011; 2015: 11). The reason for normalization is obvious: Some actors due to their institutional position or due to the fact that they represent a conflicting minority opinion, might be covered more intensively in the media (cf. Bennett 2009: 46-48). As the link weight increases additively by the number of concepts shared, these actors would have disproportionally high link weights, which spuriously would make them the central actors in the network (Leifeld 2013: 176).

4.4. Sample

Sample Time

This paper provides a longitude newspaper content analysis covering all aspects of the *Energiewende* for a research period of four years (2013-2017). In contrast to prevalent approaches to policy networks that use retrospective interview data, DNA is suited for longitudinal studies and offers a process perspective rather than an analysis of cross-sections (Leifeld 2015: 21). One of the main research endeavours is the identification of discourse coalitions and changes in coalition composition over time.

In order to assess the causal impact of these clusters on the policy agenda, however, in

¹² For further information see Leifeld (2013; 2015)

a first step, more nuanced research periods have to be defined. The 2014 EEG stands in the centre of the coded time period (2013-2016). DNA allows to observe the dynamic discourse changes before and after its adoption. Consequently, in analysing the discursive process, two sequential periods for coalition building were pre-defined. The research period before (01.01.2013-01.08.2014) and after (02.08.2014-31.12.2016) the 2014 EEG amendment. While this amendment is the key piece of legislation passed during the research period, other changes in German and international energy politics might have an influence on the media agenda. Figure 11 shows a comprehensive timeline, more detailed information on each milestone of German and International Energy Politics can be found in Figure 9.

Milestone	Explanation
Nuclear accident Fukushima	The nuclear accident in Fukushima is the contingent change event, accelerating the Energiewende. The consequent decision to phase-out from nuclear by 2022, makes Germany's transition internationally unique as it becomes a transition from both fossil fuels and nuclear energy.
Bundesbedarfsplangesetz (BBPIG) 2013 <i>Deutscher Bundestag (2013)</i>	The BBPIG determined the demand for new grid connections resulting from the Energiewende and specified all new construction projects.
Federal Elections 2013	The 2013 federal elections, changed the political landscape in Germany. After massive gains in votes for the ruling Conservatives (CDU) and the surprise failure of liberals to clear the five percent hurdle, a coalition of CDU and SPD was formed.
Coalition Agreement CDU & SPD <i>Deutsche Bundesregierung (2013)</i>	The 2013 coalition agreement shifted the responsibilities for energy politics from the Ministry for the Environment to the Ministry of Economics. Thus, the Minister position shifted from CDU (Altmeier) to SPD (Gabriel). Moreover, the agreement promised to reduce the costs of the Energiewende by reforming the EEG legislation.
EEG 2014 <i>Deutscher Bundestag (2014)</i>	The 2014 EEG amendment has been the most extensive and contested change in energy policy within the research period. More details on the changes are elaborated in the analysis.
G7 Summit Elmau	The G7 Summit in Elmau (Germany) was highly guided by questions on climate change prevention. Heads of states agreed to strive for full decarbonisation by 2100.
Paris Agreement <i>UNFCCC (2015)</i>	The Paris Agreement is an international agreement within the United Nations Framework Convention on Climate Change (UNFCCC). It was negotiated and adopted by 196 states. It aims to mitigate climate change by defining gapping the increase in global average temperature to 2 degrees above pre-industrial levels. However, it lacks enforcement mechanisms.
Bundesbedarfsplangesetz (BBPIG) 2015 <i>Deutscher Bundestag (2015)</i>	The BBPIG determined the demand for new grid connections resulting from the Energiewende and specified all new construction projects.
EEG 2017 <i>Deutscher Bundestag (2016)</i>	The 2017 EEG amendment is another change in energy policy within the research period. More details on its main instrument, competitive tendering procedures, are elaborated in the analysis.

Figure 9: Milestones of German and International energy politics within research period.

Newspaper Sample

The newspaper sample includes two of Germany’s major newspapers (s. Figure 10): Sueddeutsche Zeitung (SZ) and Frankfurter Allgemeine Zeitung (FAZ). The data will be derived from both their print articles which can be accessed via the respective online archives. The sources were selected for several reasons. Firstly, for budgetary reasons, the digital full-text archives had to be freely available. Secondly, both newspapers satisfy the “quality press” criterion (Barranco & Wisler 1999). In order to retrieve useful actor statements for the coding process, the sources needed to have a certain level of political deliberation and argumentation. Oversimplifying tabloid-style newspapers were avoided. Thirdly, media bias towards either liberal or more social reporting of events was sought to be avoided by choosing newspapers that are similar in circulation and reputation but differ in political ideology (Nagel 2015). At the same time the newspapers are considered politically moderate.

	Süddeutsche Zeitung	Frankfurter Allgemeine Zeitung
Circulation	367.579	263.667
Importance (national number by circulation)	2 nd all newspaper 2 nd national newspapers	5 th all newspapers 3 rd national newspapers
Type	National, daily newspaper	National, daily newspaper
Political Alignment	Centre-left Progressive liberalism	Centre-right Liberal conservative

Table 10: Newspaper Sample. Source: Wikipedia.

Article Sample

Before starting the qualitative coding process, the population of articles had to be defined. The article sample was intentionally kept broad by selecting all articles that included the keyword “Energiewende” (energy transition) in either headline, abstract or full-text. For the research period of over four years, a total of 4097 articles was identified and coded to a comprehensive data set.

The articles discuss the full range of policy initiatives assembled under the umbrella concept Energiewende. The main challenge certainly is the change in domestic *energy production* from fossil fuels to RES that has to be accompanied by a reconstruction of energy transmission and delivery systems and a new energy market design (nuclear phase-out, decentralization of production, technological responses to volatility of RES, storage technologies). Policy initiatives, however, also include the improvement of *energy efficiency* (demand side management, sustainable buildings, smart homes, isolation of houses, more

efficient engines and cars), *new mobility systems* (incentives for a transition to e-mobility, power to fuel technologies, the construction of hydrogen fuelling station networks, incentivizing the use of public transport and bikes), *a new energy infrastructure* (installation of power-heat-coupling (PHC) facilities, changes in the heating sector, investments into transmission nets, smart grid technologies, offshore-grid expansion) and a number of other initiatives.¹³ This paper is obviously unable to discuss all these issues. Therefore, only concepts that are connected to the main challenge, the change in domestic energy production are included in the analysis. Moreover, specifications were made to the level of analysis. Concepts featuring international and European policies were equally excluded.

Software: DNA2 and Visone

The software Discourse Network Analyser (DNA2), was used during the coding procedure. DNA2 is an open source, java-based tool for qualitative, content-based analysis (QDA). It allows to import extensive data sets with text passages from different sources (websites, newspapers, political position paper, etc.) and code these documents for political statements. The categories coded for can be customised and defined by the researcher (detailed: Leifeld 2009). DNA2 allows for a systematic and consistent analysis of political discourses over a long period and data export to network visualisation software. However, DNA2 does not allow for automated coding, as do other software programs like wordfish Nagel (2016: 123).

Visual Social Networks (Visone), was used to visualize the resulting networks. Visone is an open source software tool aimed at offering advanced visualisation methods to unexperienced and advanced social network researchers (detailed: Brandes & Wagner 2004). It performs different transformations and allows for multiple customisations (e.g. colour, size, etc.) and mathematical operations (e.g. degree centrality, betweenness).

¹³ An appealing illustration of the sectors effected by the Energiewende and the different initiatives that are to be undertaken on the way to a „decarbonized, efficient and secure energy world” can be found in Pehnt et al. (2012)

Milestones of German and International Energy Politics 2013-2017

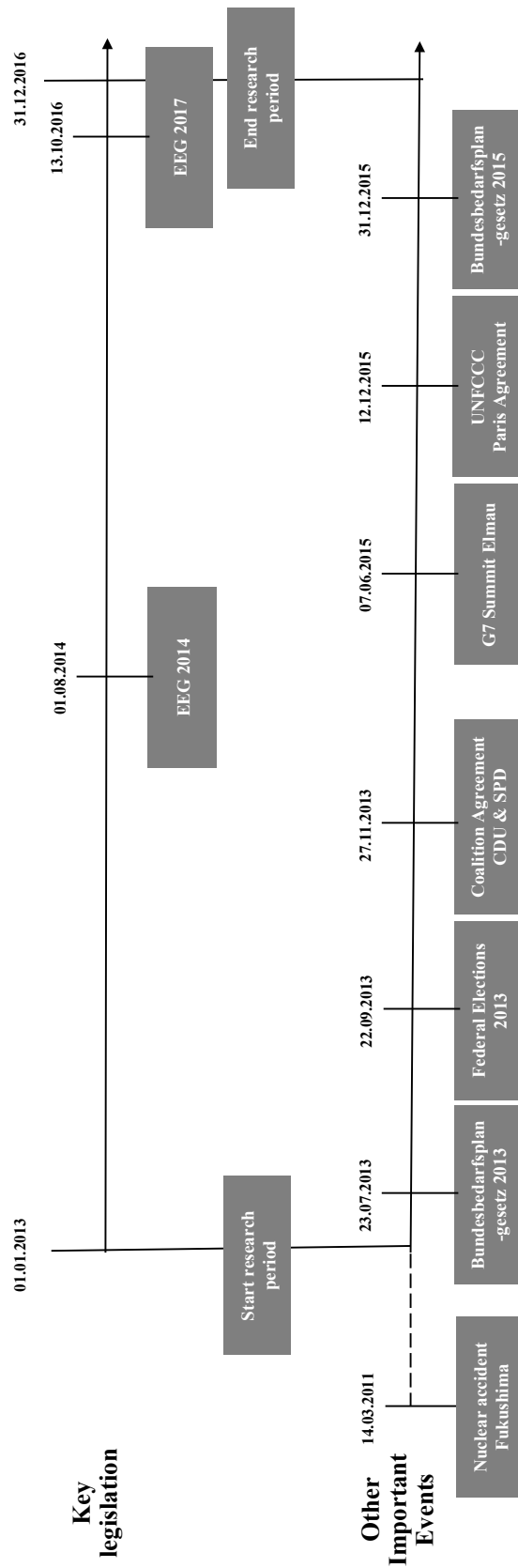


Figure 11: Timeline: Milestones of German and International Energy Politics 2013-2017. Source: Own adaption.

4.5. Quality indicators

Content analysis and the resulting network visualizations are intended to simplify a complex reality (Marschall 2009: 115). Throughout the research process, the author was forced to make compromises with regards to newspaper sample, coding procedure and technical feasibility of certain operations. Thus, the results of this paper, have to be seen in the light of certain limitations and evaluated critically.

Sample Limitations:

The newspaper sample constitutes a major limitation of this paper. Firstly, it only includes two different newspapers, thus, clearly not covering the whole range of political discourse on energy politics. In a similar vein, the newspapers selected don't cover the full spectrum of political debate, meaning that very right and very left newspapers are not represented in the sample. Rightfully, Volker Schneider in a private conversation criticised this selection as "Merkelsche Mitte" (Own translation: Merkel's moderate middle). Nevertheless, I encountered a variety of critical articles which questioned the aim and the progress of Merkel's energy transition. However, it has to be remarked that different newspapers might have given a voice to other actors, thus, enriching and/or changing the presented network configurations. Further research should therefore select a more diverse newspaper sample to avoid this criticism.

Secondly, the selection of the search term 'Energiewende' (energy transition) can be questioned. One might argue that the definition of a single keyword to define the article sample is too narrow. Knowing the German language in media and science and the popularity of the term, however, I am confident to have grasped the most relevant articles.

A third source of criticism might result from the decision to analyse newspaper articles in the first place. After all, DNA is designed to code any kind of large sets of text. While newspapers have always been a popular and accessible source for research (Nagel 2015: 119), today's political discourse increasingly takes place in social media such as Twitter, Facebook and Co. Especially, for the technical topic of energy provision, the discourse might also be fought out in specialized journals rather than in newspapers. This paper hopes to create a holistic network picture. However, it also intends to map the most relevant and prominent actors. Specialist journals and Twitter accounts are naturally limited in access and circulation. Nevertheless, future research should include these sources and report on the changes in network configuration. This would certainly enrich the network and lead to more reliable results.

Ultimately, the time sample can be criticized. The “Energienetzwerke” research project (s. Appendix) coded more than 4000 articles over a research period of four years. Reliable semi-automatic coding software for network analysis does not exist yet (Leifeld 2015: 21; Nagel 2015: 123). As such, a data set containing 4000 coded articles is remarkable. Nevertheless, it does not suffice to control for Sabatier’s (1998) assumption that policy subsystems are usually stable over a period of a decade or longer, before external punctuations lead to change. Future research should, thus, extend the research period. For example, data for 2011, when the Fukushima catastrophe polarized the German energy discourse, would be an interesting comparison.

Reliability

One of the obvious criticisms of this paper comes with regards to inter-coder reliability (cf. Ortiz et al. 2005). Multiple efforts were undertaken to ensure inter-coder reliability. Before the first coding round, detailed coding instructions were provided to every coder. Following Leifeld (2013), a multi-pass coding strategy was employed. The coders had to navigate back and forth between the articles and the code book in order to ensure a consistent way of coding. Moreover, after every round, skype sessions were held between the project lead and the single coders in which coders had to justify the introduction of new concepts. New codes were discussed and a consensual solution was found. The project lead controlled the coding quality on a random basis. After each coding round, the coding book, listing actors, organizations and categories, was amended and shared among the coders. Besides, these manual coding procedures, DNA is equipped with an algorithm that can identify self-contradiction of actors and reports this information to the coder for manual adjustment. While especially in the beginning this procedure was somewhat cumbersome and transaction costs were high, it proved to be beneficial, as the number of cases to be discussed decreased significantly due to learning effects, clear coding instructions and pre-defined categories in the code book. All of these procedures indicated a high inter-coder reliability.

Secondly, the coding procedure is characterized by a high degree of reliability. Not only are the coding instructions in DNA2 relatively simple but also does the “realistic” (Laumann et al. 1983), inductive approach to coding strengthen reliability. Aurenhammer (2016: 35-36) argues that an inductive approach to coding is more reliable than limiting the actors to those of a pre-defined list, as unknown interrelations can be uncovered. Also, this procedure might reveal that some actors do not appear in the analysis, even though they could be expected to. This might pose new interesting research questions (ibid. 37).

Validity:

It is important to clarify that this paper is observing the political discourse in the media. Jaeger (2006: 87) emphasizes that the discourse in the media “lives his own life” (own translation). It reflects societal trends and conflict lines, however, it draws a distorted picture of reality. Multiple scholars have shown that media is biased towards certain stories (cf. Ortiz et al. 2005; Bennett 2012). Bennett (2012) states that the media is more likely to pay attention to stories if they can be personalized, dramatized, fragmented and if an element of disorder can be blamed to central authorities. Media specific context factors such as news holes, attention-cycles and beats (Bennett 2012: 171-172; McCarthy et al. 1996) and personal relations between journalists and officials or PR professionals (Larsson 2002) further lead to overrepresentations in the sample. In contrast, there might be a number of influential actors that do not intend or need to “go public” in order to influence agenda-setting (cf. Baumgartner et al 2009). These actors are not accounted for in DNA.

DNA’s internal validity is threatened by the fact that network dynamics cannot be causally linked to the policy agenda. DNA is powerful in illuminating the political discourse. The findings present strong indications for ideologies, norms, beliefs and strategies that influence the policy agenda. At the same time, it is limited in empirically linking findings “from the papers” to politics in “the real world”. For Jaeger (2006: 87) the discourse does not describe reality at a point of time but rather influences individual and collective action and therefore shapes and predefines reality. Another methodological shortcoming that affects the internal validity is the operationalisation of the policy agenda. For the sake of practicability, the variable is operationalised as the legislative output, whereas it should actually be operationalized as the discussions in parliament. From these discussions that represent the diffusion of societal issues into the political debate to the final legislative output many external factors can be of influence. Nevertheless, the parliamentary transcripts that, in the research period alone, dealt with the EEG were too extensive to code them within the scope of this research. Therefore, this alternative operationalisation was chosen, which potentially underestimates the scope of the policy agenda.

In terms of external validity DNA scores higher than other methods such as qualitative in-depth interviews. Experimental methods, offering the highest degree of external validity, are generally difficult in social sciences, as they require equal treatment and control groups and stable environmental settings (Gerrits 2012). As already shown, ideational policy analysis is focusing on qualitative methods (Nullmeier 1993: 2001; Boerzel 1998; Leifeld 2009a; Lang & Leifeld 2008). These mostly interview-based studies are limited in their internal and external

validity by methodologic problems, such as interviewer effect, personal interaction effects, cost-intensiveness, non-response rate, strategic responses, subjective memory biases in retrospective studies and embeddedness (Marshall 2009; Leifeld 2011: 173). However, this paper is designed as single case study. Case studies by definition lack external validity. Some findings with regard to cross-sectional fragmentation, network governance in agenda-setting and the existence of multiple actors with different strategies and problem perceptions who interact in a mediatized political discourse might be generalized for different areas of modern policy-making in western democracies. Other findings are limited to this case and its specific context.

Furthermore, the visualisation of networks deriving from a data set as big as the one conducted for this paper, faces a trade-off between mapping as much information as possible and remaining a certain level of comprehensiveness. Adding information holds the risk of overloading the networks and making the causal connections impossible to observe. In this light, the aggregation of individual actors to meso-level organizations, is ambiguous (Marschall 2009: 128). In the case of a ministry, for example, different departments might have different missions that lead to differing intra-organizational rationalities (cf. Allison & Zelikow 1971). An aggregation of their statements, thus, does not necessarily lead to the ministries position, as some actors might have more decision-making power while others with less decision-making power might be featured in the media more often. Secondly, coalitions and cliques within the organization might have been erased when merging from the individual micro-level of political actors to the meso-level of political organizations (Marschall 2009: 128). This might influence the calculation of degree centrality (ibid. 132). Again, however, solving this “boundary specification problem” (Laumann et al. 1983) by introducing more nuanced sub-organizations would have inflated the network and reduce its usability. Similarly, the chosen threshold values reduce the number of actors mapped and change the configuration of the governance network (Leifeld 2015: 16).

Lastly, this paper’s findings have to be understood in the light of the academic selection bias. In Germany, there have been only few policy areas that have been debated so extensively and fiercely over the last years. Academic selection bias means that studies are conducted on non-representative cases.

5. Context

5.1. Germany's political system

The Federal Republic of Germany, with its present borders, only exists since 1989, when the fall of the Berlin Wall marked the re-unification of West and East Germany.¹⁴ Today, about 82 million inhabitants live on the federal republic's 357.021 square kilometres, sharing one state territory and one political system.

Germany is a parliamentary, representative democracy. The government (executive) is generally formed out of elected members of parliament (legislative). As head of government, the chancellor defines political guidelines, defines the number, shape and responsibilities of federal ministries and appoints and releases their ministers. In their respective resorts, ministers draft legislation independently. A parliamentary majority is required in order to pass legislation and the parliamentary opposition holds the functions of controlling the executive, actively voicing concerns about proposed legislation and deposing the government by vote of no confidence.

The parliament (Bundestag) is composed by politicians, organized in political parties which are elected through direct elections, by "personalized" proportional representation (Rudzio 2011: 176). In 2011, Rudzio (2011: 103) diagnosed a "bipolar five-party system" on the federal level.¹⁵ The two major parties, Conservatives (CDU) and Social Democrats (SPD) are structuring the political landscape into two distinct camps. On the political left, SPD is ideologically supported by the Green Party (B90G) and the Left Party (LINKE). On the political right, CDU is accompanied by the Liberal Party (FDP).¹⁶ While a variety of other parties exists, the five-per-cent-hurdle effectively prohibits them from entering parliament. As a result of proportional representation, in order to govern, the winning party usually needs to coalesce with a partner. In the sample period, these coalitions were CDU/FDP (10/2009-10/2013) and CDU/SPD (12/2013-present), headed by Chancellor Merkel (CDU) respectively. Compared internationally, parties play a more important role in the political and legislative process in Germany than in the USA and a less important role than in Austria (Rudzio 2011: 107). Electoral system and party discipline are prominent explanations for this finding.

Germany is a federal state. As a consequence of the misuse of centralized power during

¹⁴ It is important to remark that while the re-unification led to economic investments in Eastern Germany and economic convergence, social and economic disparities remain, which manifest in differences in voting patterns, GDP per capita, unemployment rates, proportion of foreigners and other indicators (s. also: Rudzio 2011: 322).

¹⁵ FDP's inability to clear the five-per-cent hurdle in 2013, leading to a CDU/SPD coalition and the rise of "Alternative für Deutschland" (AfD) since 2015 partly contradict this finding.

¹⁶ For detailed information on the programmatic position of each party, Rudzio (2011: 130-139) offers a highly recommended overview.

World War II, decentralization was one of the occupying forces' main rationales in restructuring Germany (Bungenstab 1970; Laufer & Münch 1997: 23). Germany is divided into 16 federal states and 402 districts at the municipal level. Its administrative structure, thus, can be characterized as tripartite and is characterized by regular elections at every level. The legislative power of today's federal states derives from the Bundesrat, a legislative body that represents the states at the national level. In comparative political research, the German government is seen as divided government with Bundesrat as lower house and Bundestag as upper house. For the Bundestag to pass legislation that affects state competences or to change the constitution, the consent of the Bundesrat is required. Each federal state sends a delegation of cabinet members to the Bundesrat that essentially represents the state's government in terms of party composition (Rudzio 2011: 51). Due to regional and historic disparities, Rudzio's "bipolar five-party system" does not apply on the state level: Governing coalitions and strategic interests vary significantly between each state as well as between federal and state level, leading to negotiations, compromises and package deals in the legislative process, if the Bundesrat is involved.¹⁷

Germany is a pluralistic democracy. Different interest groups articulate public interest and compete for political attention (Rudzio 2011: 65-75). About 2100 political associations with thousands of lobbyists are officially registered, corporate and independent lobbyists are not included in this constantly updated "Lobby-Register" (Bundesanzeiger 2017). With different strategies (funding, personal contact, public relations, strategic communication, sabotage) these lobbyists consult and influence legislation at both the federal and the state level (Rudzio 2011: 89). Especially at the local level, moreover, citizen initiatives are a common form of organized interest. Nevertheless, few influential associations mediatize and structure the political discourse and have close personal links to parliamentarians. In sum, Germany is less pluralistic than the USA or the UK but not as corporatist as Austria or Sweden (ibid. 98).

Germany is a member of the EU. The process of European integration and its shift of competencies to supra-national EU institutions has important implication for Germany's political system. As European law beats national law and as the European parliament, compared to other EU institutions, has a less important role in the legislative process than Germany's parliament compared to other German institutions, the process of integration potentially weakens the influence of Bundestag and Bundesrat in policy-making and strengthens the role of the government (Rudzio 2011: 409).

¹⁷ For detailed information on the legislative process, Rudzio (2011: 239) offers a highly recommended overview.

5.2. German Energy Politics

Energy politics lie at the heart of the European integration process (Matlary 1997; Fischer 2017). While the European Coal and Steel Community (1951) and Euratom (1958) were early attempts to foster energy production and exchange at the European level, until the 1990s, European influence on national legislation remained poor. Fragmented, national, monopolistic electricity markets with one or few, often state-owned electricity companies controlling the market were common (Jansen & van der Welle 2017: 323). In Germany four companies, E.ON, Vattenfall, RWE and EnBW, referred to as “Big 4” essentially performed all market processes from generation, over transmission/distribution via owned grids to end-user delivery. As a consequence of the 1935 Energy Management Act the “Big Four” were able to absorb municipal utilities and intertwine their corporate interests with the interests of local politicians and municipalities which are shareholders of those utilities. By 2010, the Big Four accounted for close to 90% of the total energy production and nearly 45% of energy supply allowing them a quasi-monopolistic position in the market (Sühlsen & Hisschemöller 2014; BDEW 2010).¹⁸

Then, the evolutionary process towards one internal market for energy started. In 2009, a package of EU legislation demanded the member states to unbundle their vertically integrated companies (European Parliament 2009b; 2009c; 2009d): Cross-border electricity exchange was fostered by introducing an EU-wide single price coupling for day ahead markets, agencies for energy regulation were founded and, most importantly, the production of electricity was unbundled from its transmission and delivery in order to break up existing monopolies.¹⁹ In the same year, Directive 2009/28/EC allowed state-specific support benefits to facilitate the market uptake of RES and adopted a mandatory target of 20% RES share in total energy production by 2020 (European Parliament 2009a) In the meantime, more ambitious targets were set. Though the national contributions agreed to are criticized for being non-binding and missing enforcement mechanisms, the 2015 Paris Agreement increases the pressure on Germany to achieve its CO₂-emission reduction targets of 55% by 2030 and 80% by 2050 as compared to 1990, as well as an annual share of renewable power consumption of 35% by 2020 and 80% by 2050 (UNFCCC 2015; Bundesgesetzblatt 2016). The precise energy mix and the strategy of how to achieve these reductions are not defined by the EU or the Paris Agreement but subject

¹⁸ Interestingly, since 2010 there seems to be no comparable statistic about the market-shares due to rapidly changing market conditions (Goehrmann 2016: 70-72).

¹⁹ The 2010 Energiewirtschaftsgesetz (EnWG) made these changes effective. Even though the Big Four sold their transmission systems, the geographic distribution of today’s four operators TransnetBW, Ampirion, Tennet TSO and 50 Hertz resembles the monopolistic structures.

to national legislation. According to Jansen & van der Welle (2017: 325), a general distinction can be made between national strategies with feed-in tariffs (FIT), feed-in-premiums (FIP) and renewable quota systems (RQS).

While Germany's Energiewende entails a variety of measures, its main strategy lies in guaranteed, technology-specific FIT for RES. This strategy has a tradition in Germany. The 1990 Stromeinspeisegesetz (StrEG) constitutes the decisive, legislative starting point of the Energiewende (Gründinger 2017: 281). StrEG was the first policy initiative to promote renewable energy sources (RES) in Germany, by obliging electricity companies to feed electricity from RES into their grid with compulsory priority access. Producers of RES were granted FIT for 20 years upon launch. The exact amount of remuneration was determined daily on the European Energy Exchange (EEX), hence depending on the volatility of RES, supply and demand.²⁰

In the centre of the Energiewende stands the Renewable Energy Sources Act (EEG)²¹, that was passed in 2000 and has been amended five times since. Originally, the EEG was designed to encourage the effective market entrance of RES by creating a “sheltered niche for the thriving growth of green energies” (Gründinger 2017: 257), shielding them from market risk (Jansen & van der Welle 2017: 325). Again, the German government decided to warrant a feed-in remuneration to producers of RES facilities and priority dispatch for RES generators in congested grid areas. However, the EEG's statutory provisions differ from the StrEG tariffs in three important ways. Firstly, they are uncoupled from the electricity market process and specified in fixed, absolute terms. Secondly, they granted cost-covering feed-in tariffs, which presented a “paradigm shift” (Gründinger 2017: 269). Thirdly, they differentiated the height of the tariffs by technology (e.g. solar energy), size (smaller plants receive more remuneration) and electricity yield (e.g. plant in low-wind areas receive more remuneration). The costs for the statutory feed-in tariffs are covered by the so called “EEG-Umlage”, a levy paid by the electricity consumers in form of a surcharge to the electricity price. Germany's energy-intensive, export-oriented industry (e.g. steel production), relying highly on producing at lower prices per unit than foreign competitors, are excluded from the levy. Compared to the early StrEG, legislation has increased dramatically, with the EEG 2017 alone, consisting of over 100 paragraphs and several appendices.

²⁰ For an explanation on the EEX's complex price-building mechanisms see Grimm et al. (2008) and Paraschiv et al. (2014)

²¹ This paper introduces to some of the main elements of the original 2000 EEG. For a more nuanced (160-paged) explanation, I highly recommend Gründinger (2017)

6. Analysis

6.1. The Media Agenda: Conflict Lines in German Energy Policy

The EEG succeeded in promoting RES, leading to an “unforeseen rise” in the share of renewables in the total energy production from 5% in 2000 to more than 25% in 2013, “overarching even optimistic expectations” (Gründinger 2017: 257). However, the “success” of FIT did not come without disadvantages. The Energiewende presents a market intervention that sparked fierce political conflicts among interest groups, stakeholders and academics. The discourse on the Energiewende is as manifold as the initiatives that are submerged under the umbrella concept. This section provides an overview over conflict lines in the German media, focusing on (1) Financing, (2) Social and Economic Impacts (3) Future Energy Mix, (4) Grids and (5) Decentralization. To build a bridge to the general aims of the Energiewende, presented in the introduction of this paper, Figure 13 illustrates these conflict lines with regards to the energy policy target triangle.

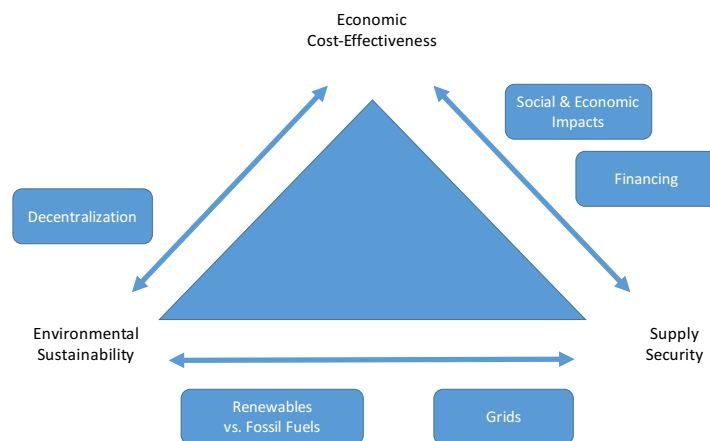


Figure 13: The five identified categories with regards to the Energiewende target triangle. Source: Own adaptation.

The five conflict lines are categories built from concepts derived from the coding procedure and can, thus, be understood as conflict lines on the media agenda. In this section, the most prominent concepts in terms of frequency for each conflict line is presented on the basis of the media content analysis. The author will introduce to the background of the conflict lines, where needed. Moreover, it is shown, how policy entrepreneurs position themselves around these concepts. This will, yet, be done qualitatively in order to create an understanding for the way the discourse on German energy politics is structured, before the sections 6.2.-6.4. quantitatively investigate media agenda, central actors and discourse coalitions.

6.1.1. Financing

Finance: Top Five Conflicts		Frequency
1	Exceptions EEG-levy for German industry	75
2	More market integration of RES	50
3	Energiewende is cost-intensive	49
4	Energy has to remain affordable and secure	32
5	Higher prices for consumers are justified	25

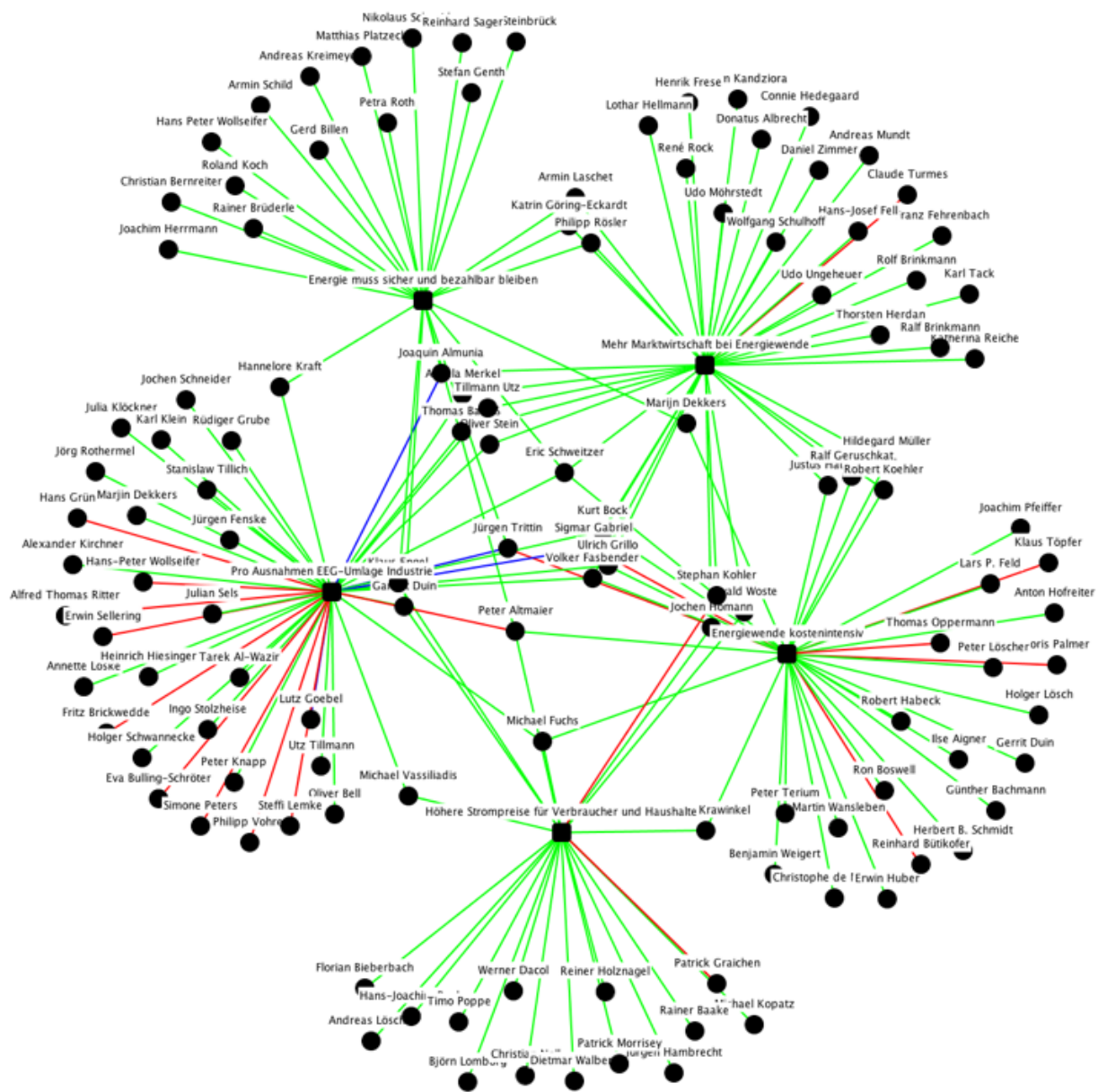


Figure 14: Affiliation Network for Top 5 categories “financing”. Squares= Concepts; Circles=Network Actors; Green Line=Agreement to Concept; Red Line=Disagreement with Concept; Blue Line=Indifference towards Concept/Agreement and Disagreement over time.

Obviously, one of the major discourses surrounding the Energiewende is concerned with financing. This category includes debates on different tax models for incentivization of RES and distribution of grid expansion costs (Netzentgelte). Many identified concepts deal with

reforming the EEG-levy (scope, duration, exceptions) and fair burden-sharing in shouldering the costs. As described, the EEG-levy is designed as a user-surcharge. Other financing models (e.g. tax-based, credit-based) are proposed or refused by political stakeholders.

The category is dominated by the discussion on the exceptions for Germany's energy-intensive industry from the EEG-levy (TOP 1). As both, EEG-levy and grid expansion costs, are cross-financed via surcharges in energy consumption prices, resistance from small and mid-sized companies as well as private consumers sparked. Due to industry exceptions, these actors shoulder the main financial burden of the transition. Meanwhile, competitors criticized the policy as state aid. Most prominently, EU institutions accused German politics of creating competitive advantages. This criticism was taken over by the Green Party. Peter Altmeier (CDU) in his function as Minister of Environment, surprisingly joined this camp by advocating more "solidarity in burden-sharing" (SZ 2013c). Also federal ministries advocated to relieve small income households. The German industry, in turn, welcomes the exclusion. Numerous actors, among them BASF, BDI, VDI and DIHK, stated their appreciation.

The EEG represents a massive market intervention. Due to the prioritized feed-in of RES, more efficient and cheaper conventional plants suddenly become uneconomical. A prominent dispute therefore surrounds amendments in EEG-levy and the gradual integration of RES back into the market (TOP 2). Ulrich Grillo (BDI) demands public tendering procedures as a replacement for the compulsory EEG-levy (FAZ 2015d). The main rationale is summarized by Andreas Mundt (BKA), who states that "competition ensures that the most efficient supplier succeeds" (SZ 2014d). Katherina Reiche (Vku) points to the critical situation of modern and highly ecological gas power plants that are driven out of the market (FAZ 2015n). The discourse analysis reveals a broad consensus for more market mechanisms. Only one actor, the Green politician Claude Turmes (B90G), disagrees. To him, the change from FIT to tendering procedures "is ordered by energy companies such as RWE and E.ON", which cannot accept the success of decentral energy cooperatives (SZ 2014e).

Other prominent concepts concern a fair burden sharing among state, businesses and tax payers. The transition is argued to be cost-intensive (TOP 3) and the importance of affordable and secure energy for low-income households is debated (TOP 4,5). In constructing the EEG, the SPD/Green coalition had built upon the faulty assumption that the international demand for electricity would increase at a pace that would, over time, eliminate the difference between fixed EEG-levy and market price for energy, thus reducing the federal subsidies to producers of RES and not increasing the electricity prices significantly. Minister of Environment, Jürgen Trittin (B90G), famously promised that the EEG-levy wouldn't cost an average household more

than 1 Euro per month, or as he put it: “a ball of ice-cream a month” (Trittin 2004 in Gochermann 2016: 61). A promise he could not keep, as technological leaps and considerable reductions in production costs led to an expansion of RES “at a breath-taking pace” (Gründinger 2017: 273)²². In an interview, Minister of Environment, Peter Altmeier (CDU) claimed that the Energiewende would cost Germany one trillion Euros (FAZ 2013c). Some discourse participants contradicted Altmeier. Thomas Oppermann (SPD) called him an “alarmist” (FAZ 2013b) and Jürgen Trittin (B90G) spoke of Altmeier’s “fairy tale” (FAZ 2013a). Nevertheless, cost-intensiveness is a prominent policy belief in the public discourse.

The expansion of RES, moreover, boosted a paradox effect. With FIT, the lower the market price for electricity, the higher the differential costs between the market price and the levy. Producers of RES (businesses and wealthy citizens), thus, increased their margins, while consumers continued to pay high prices for the RES subsidies. As a consequence, economically lesser privileged parts of society were effected disproportionately, resulting in socio-political debates on “energy poverty” (Kopatz et al 2010; Tews 2013; Frondel & Sommer 2014). Multiple discourse participants, therefore, advocate for affordable energy prices and changes in tax laws. Some actors pushed for tax-financed EEG financing. With Germany’s progressive tax-system, higher incomes would then contribute stronger to the overall success of the project compared to economically weak households. Michael Vassiliadis (IG BCE) stresses that with the Energiewende being a “societal project”, financing it out of taxes was “transparent, fair and economically reasonable” (FAZ 2015b). Chancellor Angela Merkel (CDU) admits that while for companies the Energiewende is a risky investment, “they should not only collect the profits but also be liable for the losses” (FAZ 2014a). Justus Haucap (University of Dusseldorf), in a study commissioned by the neo-liberal think-tank NSM, refuses the solution: “It does only shift costs, not make the project cheaper” (FAZ 2016a). Politically unpopular new taxes were refused by a broad coalition of politicians around Barbara Hendriks (SPD).

A second solution, brought forward with this regard, was credit financing the Energiewende. Regarding the economic benefits, the Energiewende offers, a fund of public debts with long runtime could easily be payed-off. An advocate of this solution, Holger Krawinkel (vzbv), stated that with a credit-financed Energiewende, “electricity prices could be stabilized over years” (SZ 2014a). According to Ilse Aigner (CSU), who initiated the debate, this would lead to more predictability and investment security (SZ 2014b). Green politician Oliver Krischer (B90G) called the solution “a constructive contribution” (SZ 2014c). In contrast, Horst Seehofer (CDU) refused the idea as it would “transfer the costs to future

²² The absolute electricity production of different RES from 1990-2015 is illustrated in Appendix X.

generations”, which would be “unsustainable policy-making” (SZ 2014b).

Finally, in 2013, upon initiative of Peter Altmeier (CDU) the introduction of a so-called Strompreisbremse, effectively a price cap for the EEG-levy, was discussed. Altmeier’s proposal was supported by Philipp Rösler (FDP), who forecasted that “the cap would not limit Germany’s competitiveness” (SZ 2013b). While such a cap would have helped low income households, it was fiercely fought by multiple discourse participants. Olaf Scholz (SPD) accused Altmeier preparing an “election gift” (FAZ 2013i), Robert Habeck (B90G) predicted a “standstill for renewables” if the levy was capped (SZ 2013a) and Jürgen Trittin (B90G) even spoke of a “scandal” and “stifling green energy in favour of coal” (SZ 2013b). As the EEG promises FITs for a contract period of 20 years, Sigmar Gabriel (SPD) criticized the proposal to “violate existing contracts”. Not only parties were polarized by the proposal, also actors such as the BDI took a stand against the proposal (SZ 2013a).

6.1.2. Economic and Social Implication

Economic/Social Implications: Top Five Conflicts		Frequency
1	Energiewende creates jobs	70
2	Energiewende is expensive for German industry	51
3	Energiewende economically reasonable	28
4	Energiewende damages conventional energy business	25
5	Social consequences have to be taken into account	11

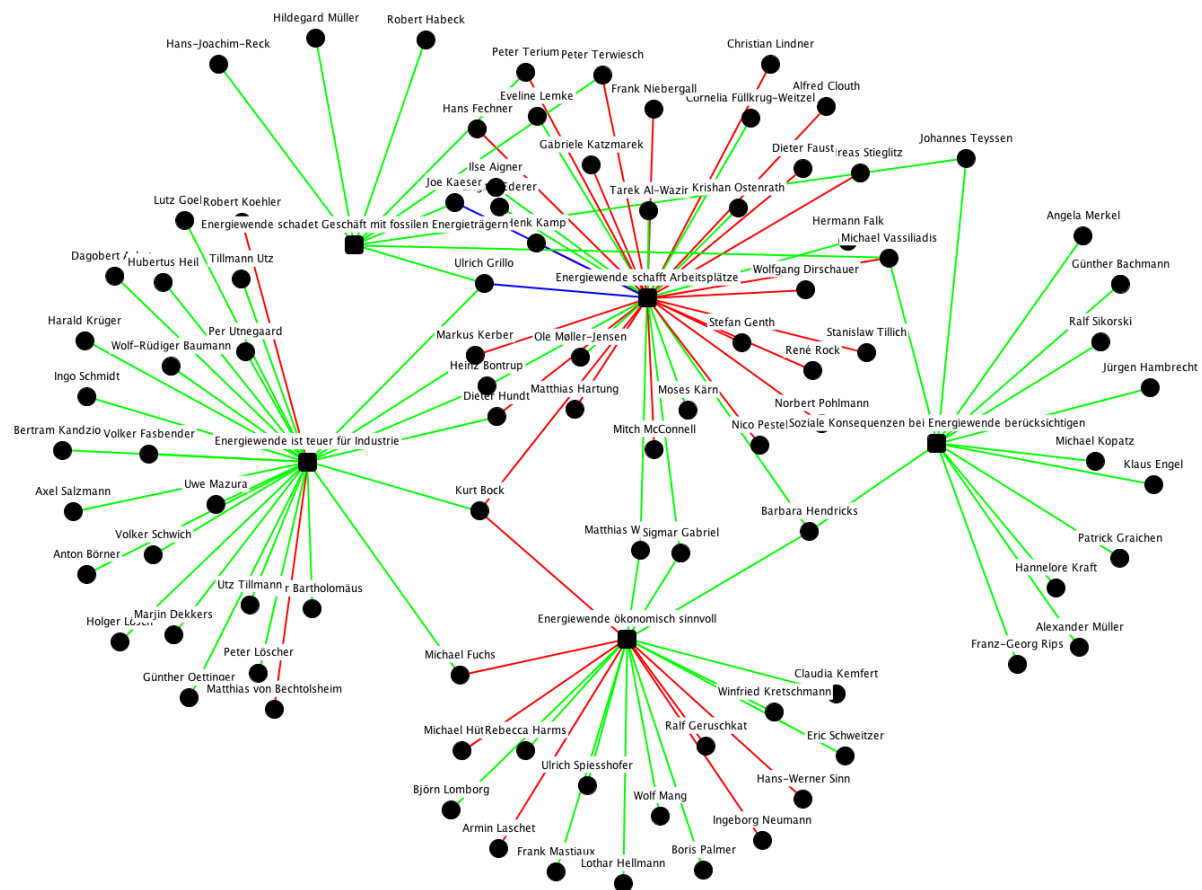


Figure 15: Affiliation network for Top 5 categories “economic and social implications”. Squares= Concepts; Circles=Network Actors; Green Line=Agreement to Concept; Red Line=Disagreement with Concept; Blue Line=Indifference towards Concept/Agreement and Disagreement over time.

In a study among major decision-makers and political stakeholders 80% of respondents believed that the Energiewende could achieve important goals aside of climate change mitigation (Joas et al. 2016). Two-third of respondents indicated that even without climate change the Energiewende would make sense. Economic reasons, such as job creation or the improvement of location factors are frequently mentioned to justify the Energiewende. The impact of Germany’s energy transition on employment, however, remains contested (TOP1) and negative economic and social consequences are frequently debated (TOP2-5).

A general distinction has to be made between cross employment effects and net

employment effects. Cross employment effects are readily visible and quantifiable: In the sectors research and development, construction, installation, maintenance and energy services as well as in the supply industry, the Energiewende has a positive impact on employment. Start-ups were created and existing firms allocated more budget to those sectors. Net employment effects, in contrast, are defined as the jobs created minus the job losses caused by the transition (e.g. in the mining industry). Net employment effects are politically disputed and subject of different scientific publications. Optimistic (Lehr et al. 2015; Dehnen et al. 2015) and pessimistic (Böhmer et al. 2015) projections alike have to admit that forecasts are methodologically complex. Projections have to account for a number of economic variables and are aggravated as energy is a cross-section industry. Moreover, they point out the facts that, firstly, the German mining industry was decreasing prior to the Energiewende already and, that secondly, the employment effects are likely to be distributed unequally among German federal states.

This academic dissent is mirrored in the content analysis (TOP1). Michael Vassiliadis, chairman of IG BCE, a labour union, representing the mining industry, called the Energiewende as a “job-killer”, and its regulations as “biased and unreasonable additional burdens” for the mining industry (FAZ 2013l). His position is shared by CEOs of different, influential companies, such as RWE, ABB, BASF or Vattenfall, who see profits and employees endangered. Politician René Rock (FDP) accuses the EEG levy to destroy jobs in small- and mid-sized companies (FAZ 2015j). The opposing camp is smaller in number but has some prominent advocates. Besides some companies (Danfoss, Juwi AG, Grillo Werke AG), Ministers Barbara Hendricks (SPD/BMUB) and Sigmar Gabriel (SPD/BMWi) consider the Energiewende as a chance for job creation. Similarly, Fritz Brickwedde (BEE) sees medium-sized construction companies “strengthened” by new business opportunities (SZ 2016a).

Secondly, companies also criticize the economic reasoning behind the Energiewende. In accordance with other industry leaders, Kurt Bock (BASF) names energy prices as “decisive cost factor” in the decision between domestic production and outsourcing (SZ 2014f). Similarly, BDI-chairman Ulrich Grillo sees „hundreds of thousands of jobs endangered”, while his colleague Markus Kerber (BDI) diagnoses politician Jürgen Trittin (B90G), who argued that the levy would not have massive effects on German companies, to have the „economic understanding of a Neanderthal” (FAZ 2013k). IEA-chairman Fatih Birol, predicts possible decreases in exports, leading to “relocations and closures” (SZ 2013g). Responding to these arguments, politician Rebecca Harms (B90G) states that relocation strategies were much older than German climate policies and advocates that reaching the 2-degree-target was more

important than employment rates (FAZ 2014b). While generally criticizing the impact on his own business, RWE-CEO Peter Terium positions himself in a middle-ground by admitting that the Energiewende offers new opportunities for businesses and start-ups that develop innovative and digital solutions.

Another often mentioned argument in defence of the Energiewende concerns Germany's technological leadership in renewable energy systems. If lesser developed countries adopt the Energiewende "blue-print", they are likely to do so using German technologies. For the German industry, especially emerging markets such as China and India, facing rapid increases in energy demand on the one hand and severe pollution problems on the other hand, promise global exports increases. Siemens-CEO Kaeser, for example, considers the export of wind turbines as an important market for his company. Eric Schweitzer (DIHK) points out that Germany's global market share for green technologies is 15%. This was not only "twice as much as Germany's average market share", the market was also "likely to double in size within the next ten years" (FAZ 2013e). Despite these hopes, first bankruptcies of German solar companies not being able to compete with Chinese competitors, led to doubt about the export potentials of technologies. At the same time, Germany is criticized for giving up its engineering leadership for conventional energy sources by focusing its research solely on renewable technologies, while many important markets still demand conventional technologies, as stated amongst others by Guntram Pehlke (Steag) and Klaus Engel (Evonik).

In TOP4 and TOP5, the controversy around employment effects is augmented by the fact that positive effects are limited to certain regions, while other regions face structural breaks (Ohlhorst 2015). Large parts of Germany do not offer the best conditions for on-shore wind energy, lacks sea connection and is too densely populated for large solar parks. While the South is economically strong, regions in the East and West rely heavily on traditional mining industries. In these regions, the loss of jobs is likely to lead to enduring, structural unemployment and stagnation. It becomes obvious, therefore, why some states oppose the federally administered Energiewende. Stanislaw Tillich (CDU), Prime Minister of Saxonia, for example sees the course of the Energiewende as "catastrophic" and states that "if the energy production from coal stops, the Energiewende will fail" (SZ 2016b). Hannelore Kraft (SPD), Prime Minister of North Rhine-Westphalia, calls the efforts of her Berlin-based party colleague, Sigmar Gabriel (SPD/BMWi), "a political solo run" (FAZ 2015m). In their claims, these Prime Ministers are supported by actors such as the association of municipal utilities (Vku) and stakeholders such as Peter Terium (RWE), who speaks of "giving up whole regions" (SZ 2013j). Even prominent advocates of renewable energies, such as Patrick Graichen (Agora

Energiewende) are clear about the project being “nothing but a fundamental structural break” and have to admit that “politicians were not honest about the gravity of the transition for coal-mining areas” (FAZ 2015e). In the content analysis, a broad consensus highlights that policy-makers have to take these social impacts into consideration.

6.1.3. Future Energy Mix (Renewables vs. Fossil Fuels)

RES/Conventional: Top Five Conflicts		Frequency
1	Pro: Phase-Out from coal-fired generation	70
2	Energiewende is a reasonable project	51
3	Pro: Expansion of wind energy	28
4	Conventional plants as bridging technology	25
5	Energiewende represents a huge chance	11

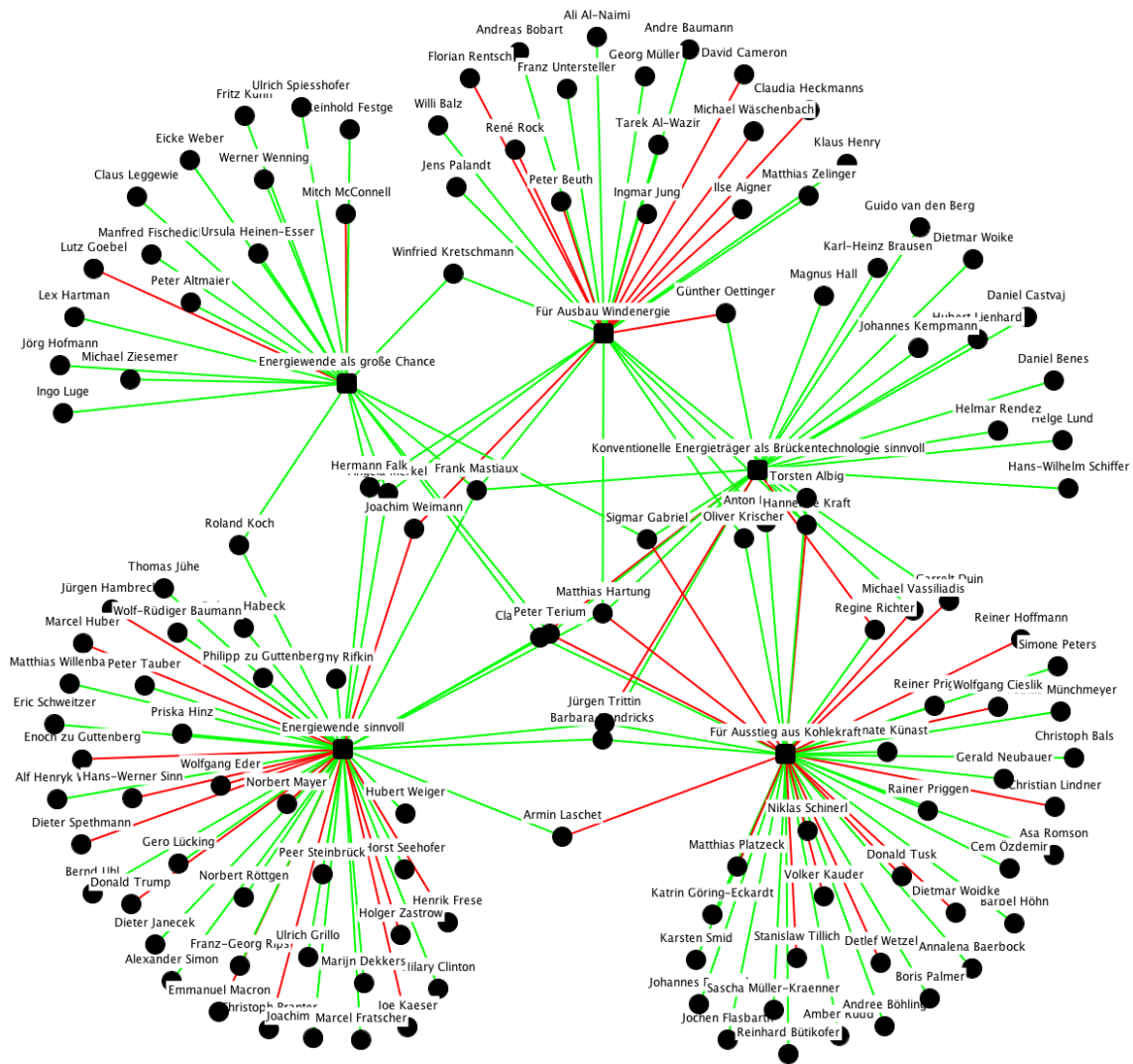


Figure 16: Affiliation network for top five categories “future energy mix”. Squares= Concepts; Circles=Network Actors; Green Line=Agreement to Concept; Red Line=Disagreement with Concept; Blue Line=Indifference towards Concept/Agreement and Disagreement over time.

This conflict line is positioned at the sustainability end of Germany’s target triangle. Political leaders agree that the main policy rationale of Germany’s Energiewende is not the phase-out from nuclear power but the transition from fossil fuels to RES (Joas et al. 2016). Nevertheless, this category might well be the most controversially debated category identified in the content analysis, ultimately questioning whether the transition process is reasonable after

all (TOP 2,5). More concrete conflicts (TOP1,3,4) arise as the EEG radically re-distributes economic gains and political power between winners (RES producers) and losers (conventional energy producers). This led to a discourse around the future energy mix. Which role do fossil fuels play? Is carbon-free energy production feasible (especially with regards to the volatility of RES)? How can periods of lesser wind and sun be backed-up? What's the general appetite for solar and wind parks from a space planning perspective? Which RES should dominate in Germany?

The main goals of the Energiewende contain the reduction of health issues created by coal and gas plants, the mitigation of climate change caused by CO₂-emissions, the protection of local environment and scarce natural resources (Löschel et al. 2014; Lehmann & Gawel 2013; Meadows et al. 1972). While transition costs towards RES might be high, RES internalize externalities (e.g. environmental impact of open-cast coal-mining) into electricity prices (Gochermann 2016: 277). Radical scholars see climate change mitigation as the only legitimate goal of the Energiewende (Sinn 2013; Weimann 2013: 795). Energiewende advocates use similar arguments. For Rainer Baake (BMW) energy policies and climate policies “cannot be separated” (FAZ 2015h). Ulrich Grillo (BDI) stresses that three third of worldwide CO₂ emissions are caused by energy production. In contrast, Kurt Bock (BASF) calls significant German contributions to climate change mitigation a “myth” (2014c). In line with Björn Lomborg (Bilfinger), he outlines that German environmental standards were some of the strictest world-wide and that “Germany’s CO₂ emissions only constituted 2% of international emissions, with only half of it being caused by the industry”. The “unreasonably” high costs of Germany’s energy transition would have more effect, spent as technological investments in less developed countries, where they would strengthen the industry instead of weakening it. Multiple discourse participants turn this argument around by calling Germany an “international example”, that by reducing costs and uncertainties associated with energy transitions, will facilitate transitions towards RES in other countries.

Concerning a potential withdrawal from coal (TOP1,4) a conflict line can be drawn between the Green Party and several NGOs on the one hand and the German industry, largely backed by all other German parties on the other hand. Michael Vassiliadis (IG BCE) and Jürgen Grossmann (RAG) highlight that coal is “the last not subsidized and economically efficient energy source” (FAZ 2014e). Hannelore Kraft (SPD) formulates a threat, commonly outlined by this coalition: The “decrease in supply security” without conventional capacity back-ups. As a consequence, Garrelt Duin (SPD) even claims that “the expansion of RES has to be reduced and conventional energy production has to be subsidized” (SZ 2013e). In contrast,

environmentalists, such as Chris Methmann (Campact e.V.) or Ann-Kathrin Schneider (BUND), “refuse the promotion of fossil fuels in any form” (SZ 2014g). And also Baden-Württemberg’s Green Prime Minister Winfried Ketschmann (B90G) states that “the final result (of the Energiewende) should be RES only” (SZ 2015a). Multiple discourse participants insist that a “reasonable”, “optimized” or “well-balanced” energy mix of RES and conventional energy has to be found. “One thing (RES) does not rule out the other (Fossil Fuels)”, Norbert Paska (DIHK) sums up (FAZ 2015l). Therefore, coal and gas have prominently been labelled as bridging technologies on the way towards a renewable energy system. “In order to account for RES’ volatility, even in the long-run, we need capacity reserves of conventional energy”, states for example Hans-Josef Zimmer (EnBW) (FAZ 2015i). Hence, “politics should not simply run from one record in RES shares to another”, says Christoph Bergner, a representative of Eastern Germany (FAZ 2013j).

A second conflict line was identified with regards to the general appetite for RES plants and the preferred source of green energy (TOP3). During a first period of EEG optimism, on-shore wind energy was considered the most promising technology. Citizen’s cooperatives formed and incentivized by large profits guaranteed by EEG’s FIT started constructing wind mills. The content analysis, however, reveals that the optimism with regards to wind energy has faded. The construction of new wind turbines is increasingly complicated by spatial planning issues and NIMBY-protests. Erich Künzler (OVG Bautzen) points out to the fact that “RES plants demand more space than conventional plants”, thus, “conflicts with nature conservation are inevitable” (FAZ 2013g). Also they create new competition between energy production and farming, as Florian Henle (Polarstern GmbH) stresses (FAZ 2015g). Horst Seehofer (CSU) prominently spoke of a “asparagusation of Bavarian countryside” (FAZ 2013m) - referring to the similar shape of wind turbines and the vegetable. In the state of Hesse, even a Green minister was applauded by politicians from all parties for cancelling plans for wind turbines that were to be built in a rural area close to the UNESCO World Heritage Upper Middle Rhine Valley. Environmentalist Enoch zu Guttenberg (formerly BUND) even compares the destruction of German countryside by wind mills with the destruction of Iraqi cultural sites by the terror organisation Islamic State (FAZ 2015f). In defence of RWE’s coal mining business, Peter Terium, prominently asked “Which form of energy production do you favour? There is none that does not interfere with the nature. You will find opponents for everything, even solar and wind”. As a consequence of this new resistance, the relative success and profitability of wind energy and unsolved grid congestions, a cap for wind subsidies was debated.

6.1.4. Grids:

Grids: Top Five Conflicts		Frequency
1	Grid expansions necessary	70
2	Pro Suedlink	51
3	Pro underground cables	28
4	Current process of grid expansions positive	25
5	Environmental protection more important than grid expansions	11

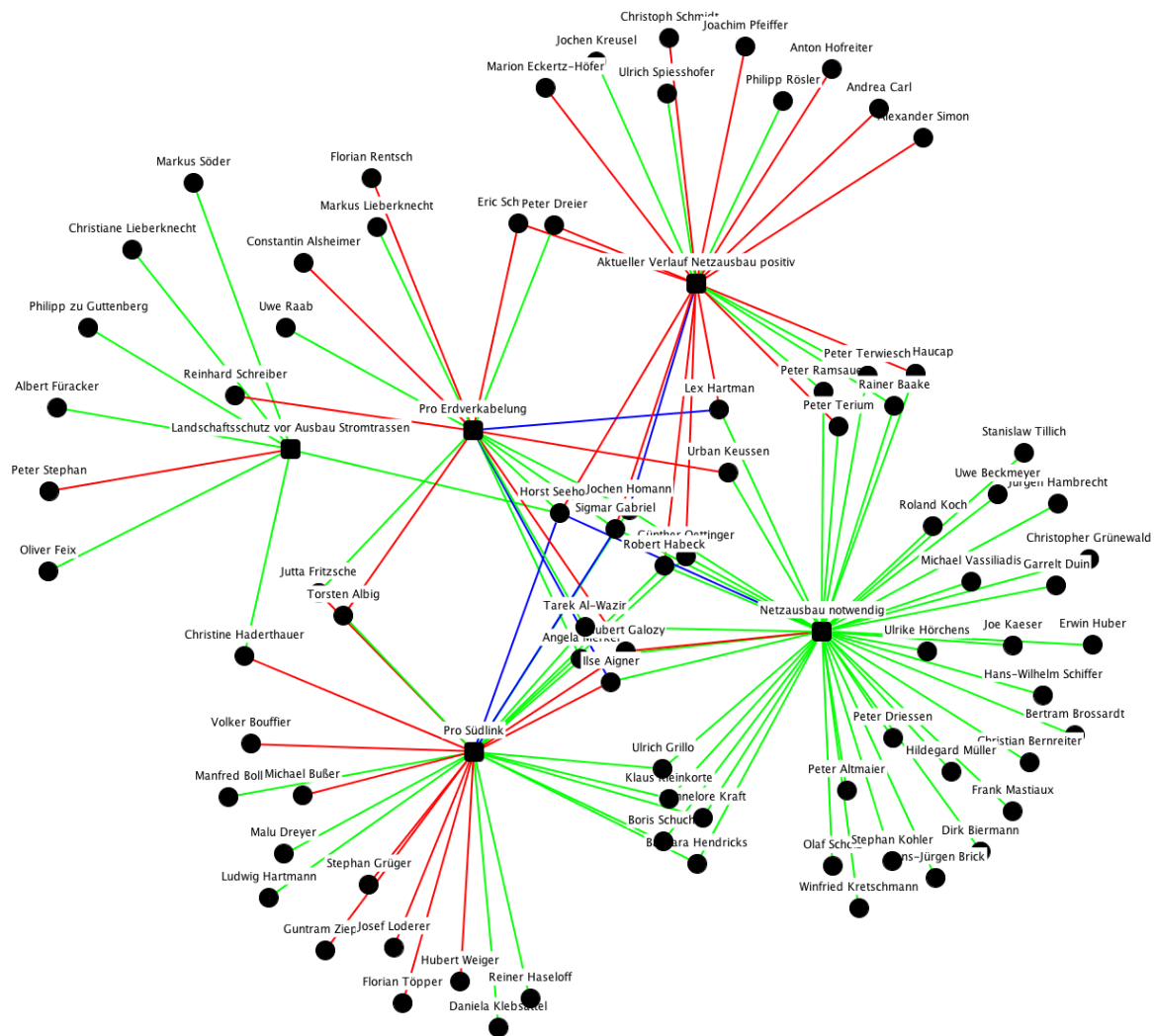


Figure 17: Affiliation network for top five categories “grids”. Squares= Concepts; Circles=Network Actors; Green Line=Agreement to Concept; Red Line=Disagreement with Concept; Blue Line=Indifference towards Concept/Agreement and Disagreement over time.

Market and grid integration of RES tend to be problematic due to high volatility (Jansen & van der Welle 2017). Not only do temporary variations caused by RES’ dependency on seasonal weather phenomena pose a threat to the security of supply, regional disparities also reinforce grid congestions. RES are produced in certain, rural areas of the country and increasingly in off-shore wind parks in the Northern Sea. Currently, during periods of strong winds, off-shore wind parks have to be shut down and taken from the grid to ensure grid

stability. The costs for this re-dispatch interventions are immense. Expensive investments into grid infrastructure, financed via a levy (Netzentgelte) by electricity consumers, are necessary to ensure that RES can be used efficiently. Prosumers, who produce and consume their own energy before feeding-in surpluses, are excluded from contributing to the levy (BDEW 2017: 25). In the content analysis, the necessity of grid expansions is prominently featured in the media and reveals a broad consensus (TOP1). Categories concerned with the manner of expanding the grid (2-5), in contrast, cause political controversy.

While industry actors generally promote fast and non-bureaucratic procedures, citizen initiatives, local land owners and environmentalists demand extensive approval procedures taking aspects of environmental protection into account (TOP5). Decentralization, moreover, leads to changing demand in grid design. While huge transmission networks are mostly needed to transport off-shore wind energy from the north to the south of the country, distribution networks gain in importance. The energy system becomes more decentral. Studies estimate that 94,7% of RES facilities are connected to distribution networks and likely to be consumed locally (BDEW 2017: 24). Nevertheless, transmission networks have to be built to avoid grid congestions and black-outs, as storage technology is insufficiently developed. Especially the huge SUEDLINK project (TOP2), fiercely fought by citizen initiatives, received media attention. As a result, Bavarian politicians, such as Ilse Aigner (CSU) and Florian Töpper (SPD) as well as Prime Minister Horst Seehofer (CSU), positioned themselves against federal expansion plans. This “total blockage”, as Green politician Ludwig Hartmann (B90G) formulated, was met with incomprehension in other parts of Germany (SZ 2015b). Reiner Haseloff (CDU), Prime Minister of Saxony-Anhalt, saw “severe economic consequences for the wind energy producing states”, if SUEDLINK was not constructed (FAZ 2015a).

Another controversy arises around the design of new power lines (TOP3): Are cheaper overhead power lines, potentially a blight on the landscape, or more expensive underground cables, further increasing construction time, the way forward? Definitely, underground cables spark less public uproar against construction projects, as Tarek Al-Wazir (B90B) remarks. Underground cables were also favoured by local authorities and environmentalists. Having undertaken several appraisal procedures for overhead power lines already, transmission network operators and construction companies oppose underground cables. They are supported by Liberals and local farmers. An outsider stance is taken by Hubert Galozy (AB GGSO), who is rejecting both forms of grid extension, as they give competitive advantages to centralized transmission network operators transmitting conventional energy as compared to decentralized green energy production (SZ 2015k).

6.1.5. Decentralization

Decentralization: Top Five Conflicts		Frequency
1	Energiewende is a task for the whole of society	42
2	Energiewende should be organized decentral	42
3	Faster grid expansion necessary	21
4	Trend towards re-municipalisation is positive	13
5	Financial participation of citizens in energy projects is positive	11

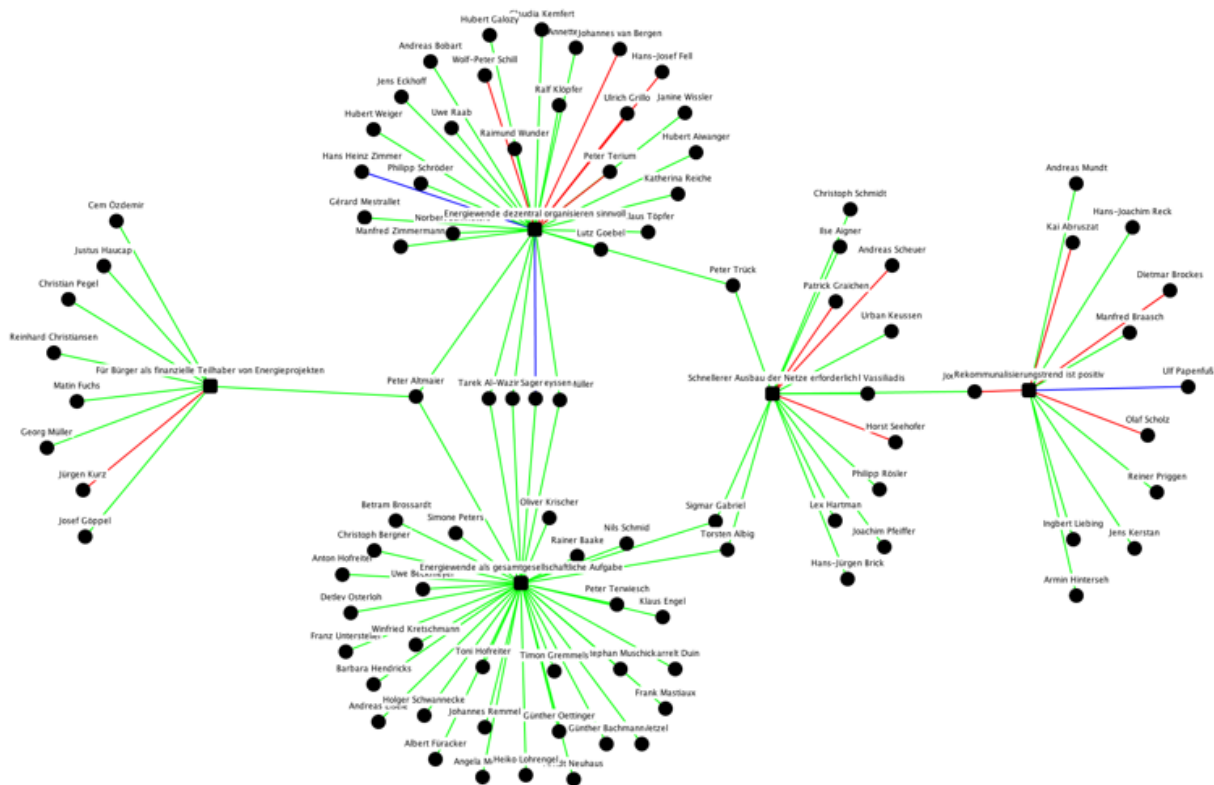


Figure 18: Affiliation network for top five categories decentralization. Squares= Concepts; Circles=Network Actors; Green Line=Agreement to Concept; Red Line=Disagreement with Concept; Blue Line=Indifference towards Concept/Agreement and Disagreement over time.

Some scholars argue that decentralization is the main goal of Germany’s Energiewende. (Jungjohann & Morris 2016; Canzler et al. 2016; Ohlhorst 2015). Meaning the break-up of Germany’s traditional energy oligopoly, as often promoted by the Green and Left Party (Hennicke 1985; Joas 2013). Due to EU liberalisation, the big four supra-regional companies are now in competition with 56 regional and more than 800 local utilities (Renn & Marshall 2016: 226). The EEG’s protectionist market intervention is another step in disturbing the formerly quasi-monopolistic structure of few large providers with closely-knit political networks and increasing competition and a break with dominant neo-liberal paradigms of privatization of utilities and deregulation (Wrobel 2011). In the preface of “Energy Democracy”, Morris & Jungjohann (2016) state that Germany is “the only country in the world where the switch to renewables is a switch to energy democracy”. They argue that the

Energiewende essentially is a bottom-up initiative to decentralize energy production (ibid.: 15) and allow for citizen energy cooperatives (“Bürgerenergie”) and individual energy autarky (ibid.: 101):

“Visitors who come to Germany to learn about its energy transition often ask how the government gets the public to play along, especially given the high price tag. But if you understand the Energiewende as a grassroots movement rather than a governmental master plan, you know the question should be: how did the Germans get their government to do what the public wanted even when it hurts big energy companies?” (Morris & Jungjohann 2016: 4).

In the literature, however, the interpretation of decentralization as democratisation is criticized as “romantic understanding of energy supply” (Joas et al. 2016), as not every citizen will be able to produce his own energy, due to differing geographic and socioeconomic factors (Ohlhorst 2015; Schneider et al. 2007).

In the content analysis the discourse on centralization versus decentralization was identified as one of the five leading debates around German energy politics. Democratic participation and involvement are seen as central elements for the project’s legitimacy (TOP1). Cem Özdemir (B90G) labels the Energiewende a “democratization project” (FAZ 2013f). In this light, Stephan Muschick (Innogy Foundation) envisions “empowered consumers” as well as “new forms of participation” and does not see the Energiewende as an expert project but as a “challenge for society as a whole” (FAZ 2015c). The latter notion is broadly shared among discourse participants, though they use it with different intension. While some use it to promote participation, others use it as an argument for financing the Energiewende. Peter Altmeier (CDU) admonishes the states to overcome conflicts, while Johannes Thyssen (E.ON) demands burden-sharing between citizens and industry. A widely accepted option to do so is by empowering citizens to buy shares of renewable energy projects (TOP5).

Secondly, decentralization is considered a necessary consequence of the strengths and weaknesses of renewable energy sources (TOP2). With the exception of few large off-shore wind-parks, most renewables are small or medium-sized and operated by municipalities, farmers, small and medium-sized enterprises and regular citizens. Nearly 1,5 million facilities received financial support through the EEG in 2013. Due to the Energiewende, the number of “prosumers” (private or corporate providers that consume their own energy and sell the surplus to the national grid) has risen to more than 40.000 changing the formerly oligopolistic market drastically (Renn & Marshall 2016: 226). Most discourse participants generally favour this development. It seems logic that especially E.ON-CEO Johannes Thyssen and RWE-CEO Peter Terium advocate for a centrally organized transition. Interestingly, for this concept they are supported by Green politician Hans-Josef Fell (B90G).

Lastly, the trend towards re-municipalisation of utilities (TOP 4) is firstly considered “desirable”, as for example Ingbert Liebing (CDU) states (FAZ 2016b) and secondly seen as an “additional source of income” for municipalities, as Hans-Joachim Reck (Vku) stresses (FAZ 2015k). More optimistically, Jochen Flasbarth (UBA) goes so far as to state that, “under certain condition, municipal energy autarky is possible” (SZ 2013d). Tarek Al-Wazir (B90G) repeatedly outlined the positive impacts of wind energy on local value-chains and municipalities. Other actors, such as Olaf Scholz (SPD) and Ulrich Papenfuß (University of Leipzig) are more sceptical about the re-municipalisation trend. According to Kai Abrusztat (FDP), municipalities create risky “dependencies” on a “high volatile market” (FAZ 2013d) and Jochen Homann (BNetzA) does not see the energy market as “cash cow, financing theatres, public swimming pools and kindergartens” (FAZ 2014d).

6.2. Media Agenda II: Concepts leading the German Energy Discourse

The previous sections introduced to some of the most important conflict lines in German energy politics as well as some of their key debates and provided some qualitative examples of which arguments are brought to the media agenda by policy entrepreneurs. This section aggregates the five conflicts lines and investigates the most influential concepts by calculating their discourse centrality. Interestingly, over the course of the research period, different concepts were most central in the discourse.

In 2013, the discourse centred around the conflict line “financing”. After the rapid increase in share of RES, the media agenda was dominated by ideas of how to reduce the costs of building additional plants. The exceptions of German industry from the EEG-levy was sparking the biggest controversy. Within the eight most central concepts, five concepts derive from the category “financing” and two debating the regulatory framework of EEG more generally. In total numbers, the conflict line around the “future energy mix” is featured frequently but is less central (Figure 19).

During the EEG 2014 the conflict line of “financing” remains prominent. The most central concept on the media agenda is the question whether the 2014 EEG-amendment was reasonable. Interestingly, the conflict line of grid expansion picks up speed with two concepts in the top 10. The debate on economic and social impacts of the Energiewende surprisingly seems less central to the discourse (Figure 20).

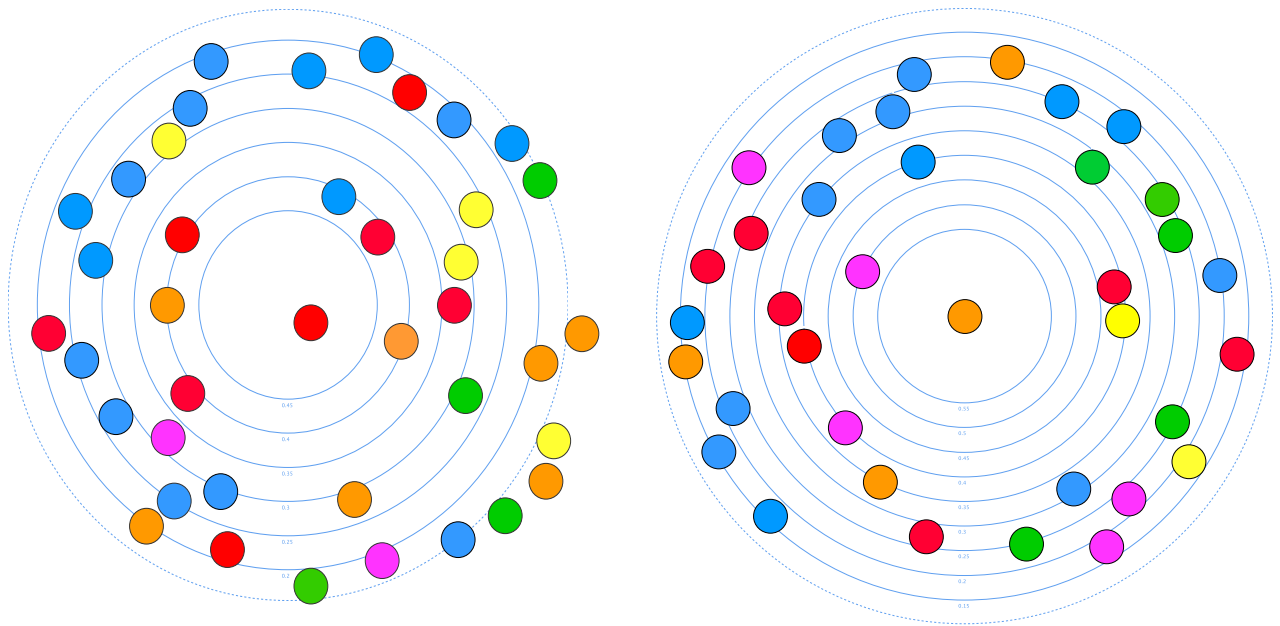


Figure 19 and 20: Concept Centrality 2013 and 2014 by year; Red = Financing, Green = Economic and Social Impacts, Blue = Energy Mix, Pink = Grids, Yellow = Decentralization, Orange = EEG legislation; Varying Thresholds; Source: Own Adaption from data.

In 2015, the conflict line “grids” overtakes the other conflicts with regards to discourse centrality. The question whether or not a grid expansion is needed and how it should be designed in order to foster a decentralized energy system is debated. Three concepts linked to the conflict line are among the five most central concepts, along with a concept linked to decentralization and the economic debate on whether or not the Energiewende creates jobs. Also the construction of new wind mills with regards to grid connection is a central debate. Apparently, after the 2014 EEG-amendment introduced tendering procedures, the conflict line “financing” became less important and more substantial questions of market and grid design made it onto the media agenda (Figure 21)

In 2016, finally, the total number of articles featuring the Energiewende decreased. The tendering procedures are re-enforced by Policy entrepreneurs, as the media agenda centres around more market mechanisms and better coordination of new RES plants with grid expansion. While before, the future energy mix frame was mostly represented by criticism of stakeholders in the conventional energy field or debates on the construction of additional wind mills, in 2016, with the bankruptcy of different German solar panel producers, the future of solar energy receives media attention. Also the social and economic impact of the transition were discussed more prominently (Figure 22). Figure 24 summarizes the findings and Figure 25 aggregates the four years into one graph.

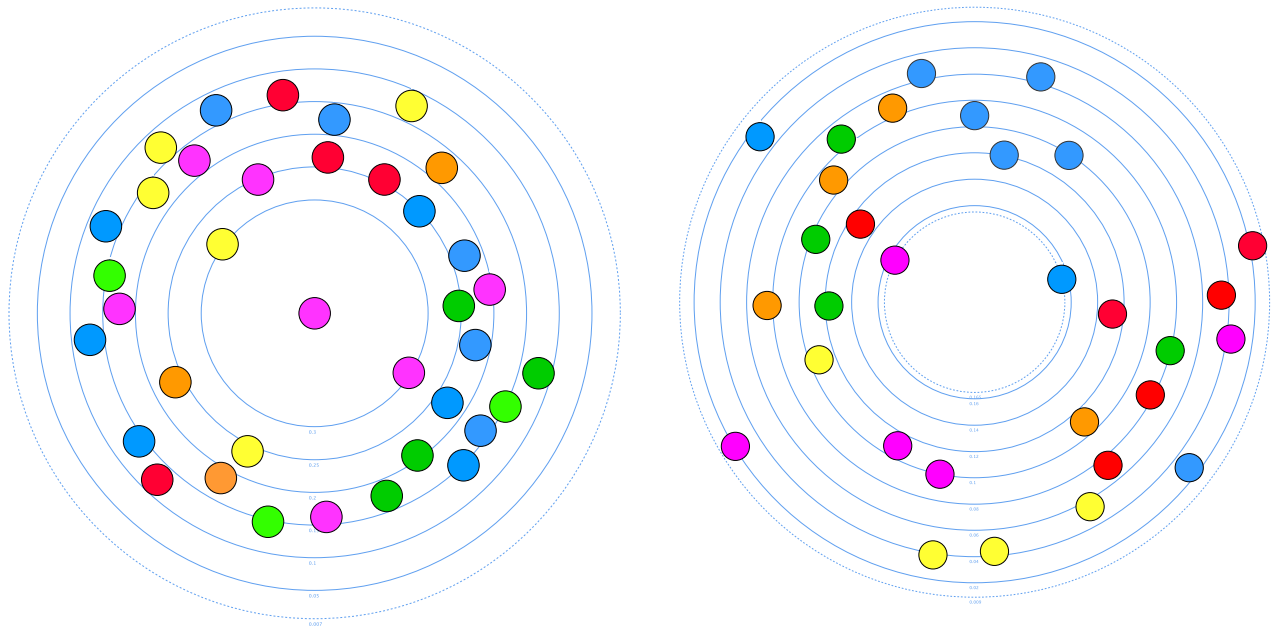


Figure 21 and-22: Concept Centrality 2015 and 2016 by year; Red = Financing, Green = Economic and Social Impacts, Blue = Energy Mix, Pink = Grids, Yellow = Decentralization, Orange = EEG legislation; Varying Thresholds; Source: Own Adaption from data.

Five most central concepts by year				
	2013	2014	2015	2016
1	Exceptions EEG-levy for German industry	EEG-amendment reasonable	Grid expansions necessary	Expansion of solar energy
2	Energiewende is cost-intensive	Grid expansions necessary	Energiewende should be organized decentral	Expansion of RES connected to grid expansion
3	Energiewende is reasonable	Energiewende is cost-intensive	Pro: Expansion distribution networks	More market integration of RES
4	EEG-amendment reasonable	Energiewende as a challenge for society as a whole	Energiewende creates jobs	Energiewende is cost-intensive
5	Pro: Price cap for electricity	Exceptions EEG-levy for German industry	Pro: Underground cables	Coal power is important for the regions

Figure 24: Most central concepts per year, 2013-2016. Source: Own adaption from data.



Figure 25: Concept Centrality 2013-2016 aggregated; Red=Financing, Green=Economic and Social Impacts, Blue=Energy Mix, Pink=Grids, Yellow=Decentralization, Orange=EEG legislation; Threshold: 0.35; Labels Included; Source: Own Adaption from data.

6.3. Policy Entrepreneurs and Brokers: Actors in Germany’s Energy Discourse

The policy subsystem of German energy politics has been defined as the sum of all actors participating in the process of agenda-setting in the media. In the DNA coding procedure, 554 actors have been identified and classified into seven distinct categories (Figure 26), following Tufte’s (1990) logic of micro/macro reading. For enhanced comprehensiveness, the categories form macro level frames of reference aside the elementary micro level data. For example, a differentiation is made between national and federal decision-makers in order to illuminate intra-party and multilevel conflicts. Interest groups are specified along three different categories to illustrate cleavage conflicts. Research institutes are included, as in they function as important reference points for policy-makers and citizens.

Subgroup	Included actors	Colour
National decision-makers	Politicians Bureaucrats Political Parties Political Youth Organizations	Red
Federal decision-makers	Politicians Bureaucrats Political Parties	Yellow
Interest groups 1: Liberal actors	Industry Banks Insurance Companies Employer’s associations Managerial interest groups	Blue
Interest groups 2: Social and environmental actors	Trade unions Employee representations Social interest groups Environmental interest groups Social Movements	Green
Interest groups 3: Grid actors	Transmission Network Operators	Pink
Scientific organizations	Research institutes Universities Think-Tanks	Orange
Others	All actors that cannot be groups in one of the other clusters	Black

Figure 26: Classification of actors in the dataset. Source: Own Adaption.

After the previous section identified the main conflict lines (concepts) in the German Energiewende discourse, this section is illuminating the most influential policy entrepreneurs and policy brokers (actors). Policy entrepreneurs, are central actors, who bring forward political demands, attempt to form mass public opinion, catalyse change and build coalitions for reform (Kingdon 1984; Zaller 1992).

Policy entrepreneurs were operationalized as actors with degree scores higher than 0,75. The degree score illustrates the centrality of an actor within the discourse, measured by

for very different reasons. Bavaria is involved in the debate on grid extensions, as those grids are planned through Bavarian territory. Schleswig-Holstein is a major benefiter of the Energiewende and pushing for off- and onshore wind energy. North Rhine-Westphalia, in contrast, is promoting an Energiewende at reduced speed, as most coal mines and conventional power plants are located within the state and the Energiewende poses a threat to employment and structural development.

For the period before the EEG 2014, liberal interest groups such as the BDI and companies such as BASF are influencing the political discourse with their positions. The recent shift of responsibility for the Energiewende from the Ministry of Environment to the Ministry of Economics is observable and Chancellor Merkel herself is highly involved in the discourse. Though being in the opposition, the Green Party is positioning itself as a thought leader. Interestingly, research institutes and environmental interest groups do not show degree scores that would allow for them to be labelled policy entrepreneurs. Obviously, in this period, industry interests were more successful in setting the media agenda.

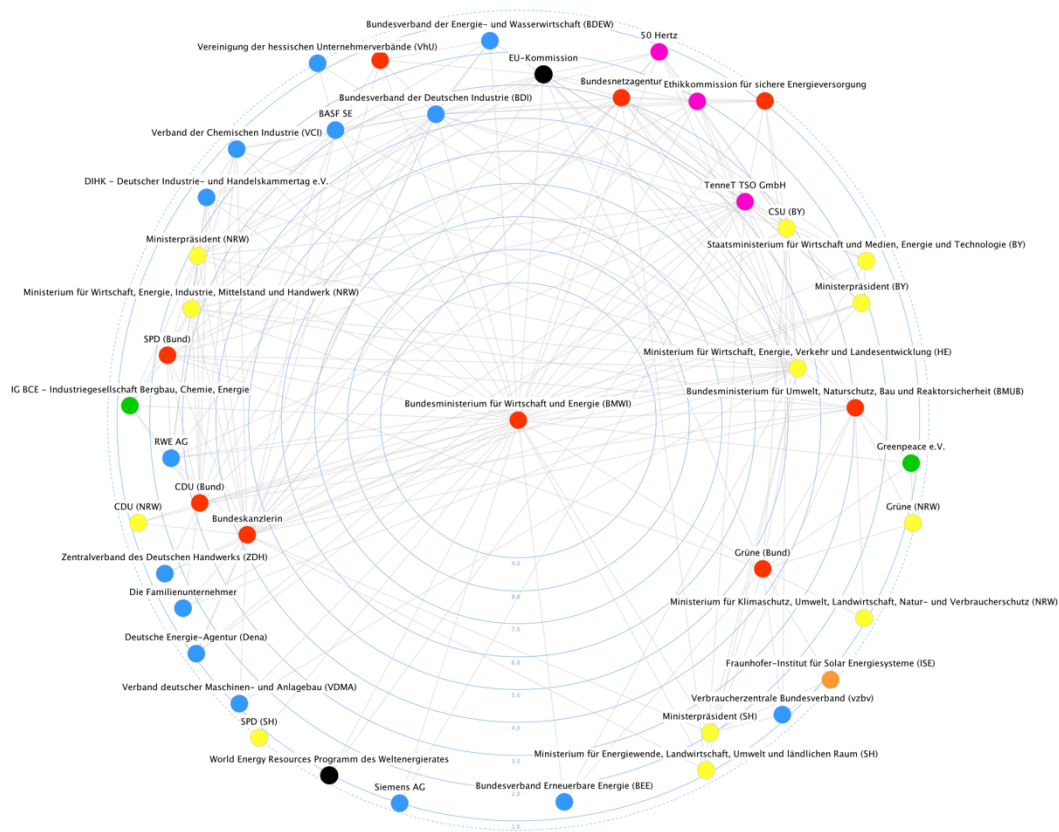


Figure 28: Network Actors by degree score 08/2014-12/2016. For better visualization only nodes included with: Degree: >0,75; Node Frequency >2; Link Weight >6.

For the period after the EEG 2014, Chancellor Merkel and the Green party reduce their efforts in influencing the discourse. In turn, new policy entrepreneurs are positioning

themselves in the media. The transmission network operators are promoting their position ahead of the BBPIG 2015 and with Greenpeace and FISE, an environmental interest group and a research institute can be found.

Policy brokers in contrast to policy entrepreneurs are not influential due to their congruence with other network actors but due to their role as intermediators (Sabatier 1988:104). They are trusted by both sides, stand in between the camps with regards to their policy core beliefs and have some decision-making authority (Sabatier & Weible 2007: 128). They bridge so called structural wholes between different coalitions within the network, as each dyad contributes the dependency of its members on the focal broker. Granovetter (1973) in this respect speaks of the “strength of weak ties”.

For the defined research periods, similar actors are brokering the network. Nevertheless, their betweenness centrality is significantly changing over time. In the period before the 2014 EEG, the Ministry for Economics is clearly the central policy broker, confirming the finding that administrative agencies often function as brokers (Sabatier 1998). Other federal ministries and federal prime ministers can potentially play an important mediating role. Interestingly, RWE is the most central industry actor in terms of betweenness. On the one hand, RWE is positioning itself alongside other industry actors, on the other hand, it shares many common policy beliefs with the ideologically rather green think-tank Agora Energiewende (s. next section).

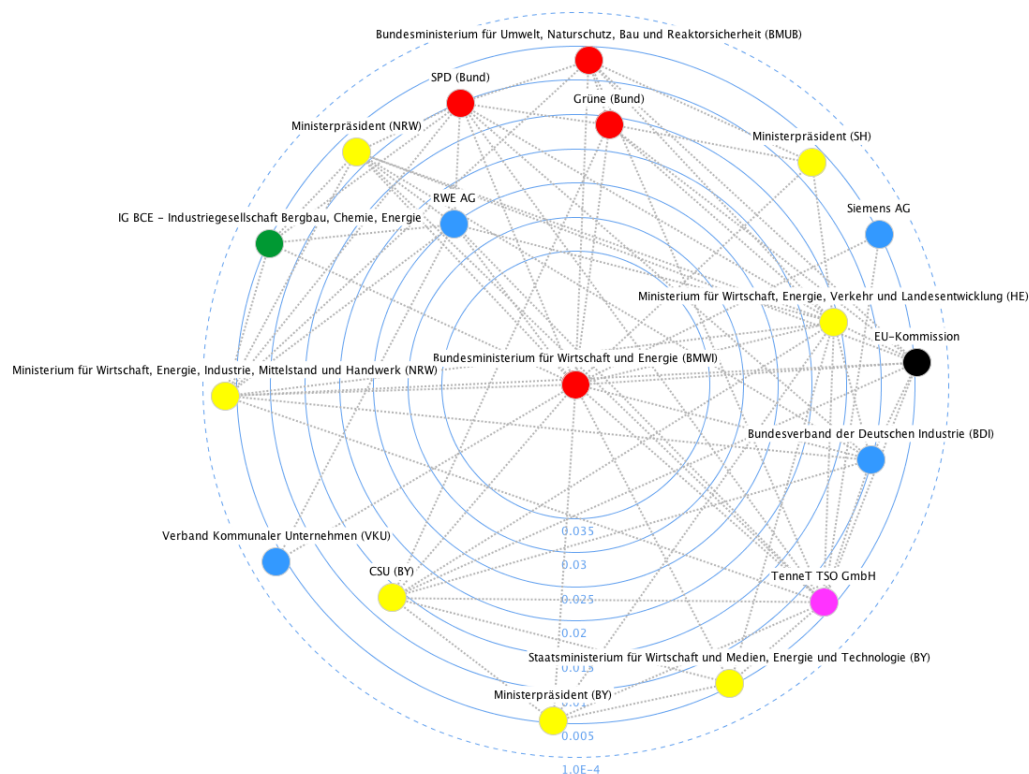


Figure 29: Network Actors by betweenness score 01/2013-08/2014. For better visualization, only nodes included with: Betweenness: >0,04; Node Frequency >6; Link Weight >6.

In the time after the legislation is drafted, the Ministry, however, is reducing its centrality, which means it is taking on a more partisan position within the network (s. Figure 30). Surprisingly, the CDU fraction is replacing the SPD fraction, that seems to follow the partisan shift of the SPD-held ministry. Instead, the Green Party is the new central mediator. As we shall see by viewing the discourse coalitions (next section), B90G is bridging the structural whole between a Green/RES coalition and a liberal/conventional coalition. Interest groups such as BDI and BDEW that by mission are communicators between industrial interests and governmental organizations, also take over a more important role, while RWE, in publically fighting to protect its conventional energy plants against RES competitors, increasingly positions itself in the centre of the liberal/conventional coalition.

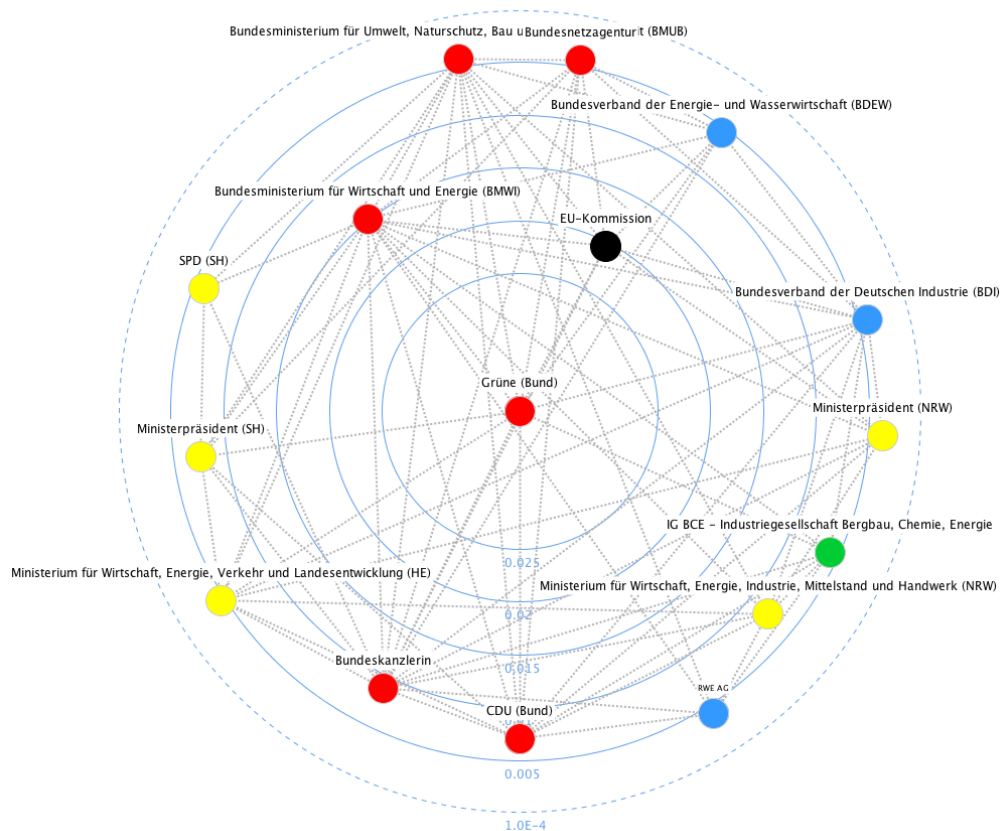


Figure 30: Network Actors by betweenness score 08/2014-12/2016. For better visualization, only nodes included with Betweenness: >0,04; Node Frequency >6; Link Weight >6.

6.4. Discourse Coalitions: Structuring the policy subsystem

The previous sections focused on media agenda and important actors within the network of German energy politics. In order to answer this paper's research question, now, the constellation of network actors towards each other is investigated. As an explanatory tool discourse coalitions are depicted. Based on high cluster coefficients for concept congruence these coalitions can be understood as cohesive groups with regards to policy core beliefs. Again, a differentiation is made between the period before and after the EEG 2014.

According to Howlett & Ramesh (1998: 475), policy subsystems can either be dominated by a hegemonic community or be contested. In the first case, a dominant set of policy beliefs is largely shared among network actors and therefore remains unchallenged, while in the latter case different policy beliefs are polarized and different coalitions compete for support. Applying the ACF, Weible (2008: 625) in this case of contested subsystems speaks of "incompatible beliefs and different patterns of coordination". Contested subsystems are said to be more "open to new actors and (...) ideas" (Howlett & Ramesh 1998: 473). Consequently, the number and shape of coalitions within a subsystem have an effect on policy-making (Sabatier & Jenkins-Smith 1993).

The Girvan-Newman clustering algorithm explores discourse coalitions by removing edges with high betweenness values. The idea behind this method is that these edges are standing in between different groups. Thus, a step-wise removal allows for the exploration of coalition structures (Girvan & Newman 2002). The algorithm is a common method to identify advocacy coalitions in networks (cf. Rinscheid 2015). On the next pages the actor congruence networks for before (Figure 31) and after (Figure 32) the 2014 EEG are visualized. In order to reduce the complexity of the visualization, only actors with (a) four or more contributions in the data set and (b) Girvan-Newman clustering coefficients of 0,35 and higher are included.

For the period before the EEG 2014, the actor constellation within the network is characterized by two large coalitions. The majority of actors is part of a coalition that builds around the federal decision makers (ministries, chancellor, coalition parties SPD and CDU, BNetzA). The composition of the coalition (grey in Figure 31) is quite diverse, as federal and state actors, companies, research institutes, transmission network operators and environmental actors are part of the coalition. It can be concluded from these findings, that for the period before the EEG 2014, state-level actors largely supported the federal Energiewende policies with only few exceptions (FDP (HE)). Also, the federal parties largely agree on the governmental policy plan. Only the Liberals (FDP), traditionally known for pro-business policies, are not part of the hegemonic coalition. In line with the findings in 5.4., that named

the financing of the Energiewende as one of the major topics on the media agenda, the Federal Ministry of Finance (BMF) is another central actor in this coalition. The coalition, thus, can be assumed to represent the dominant policy ideas. Taking the definition from the operationalization section, the 24 associated actors form the “winning coalition” in the subsystem.

A second, “liberal” coalition (blue in Figure 31) of company and industry interests is contesting the hegemonic coalition. This cohesive group mainly contains conventional energy producers and consumers (GE, E.ON, StatOil, BASF, SGL Carbon, Siemens) and is backed by influential lobby groups (BDI, DIHK, BDEW). In the discourse, the coalition is supported by the Bundeskartellamt (Federal Cartell Office), whose president Andreas Mundt repeatedly stressed the importance of introducing more market mechanisms for RES, instead of FIT (FAZ 17.04.2014; 08.03.2014). In his function, Mundt rejects state interventions that favour a particular energy source (SZ 12.02.2014). Interestingly, of the “big 4”, only E.ON is represented in this group, while RWE and EnBW are contesting governmental policies less frequently in the media. Vattenfall, the fourth big producer is not even part of the discourse network. In total, the coalition is comprised of 16 network actors and can be seen as the “loosing coalition”.

Finally, the Girvan & Newman clustering algorithm identifies a third group that is composed of two actors, Greenpeace and the Ministry of the Environment in North Rhine-Westphalia (green in Figure 31) This group is representing “greener” policy options and is congruent to the Green Parties policy preferences. Due to its size, however, it’s impact can be neglected for the research period.

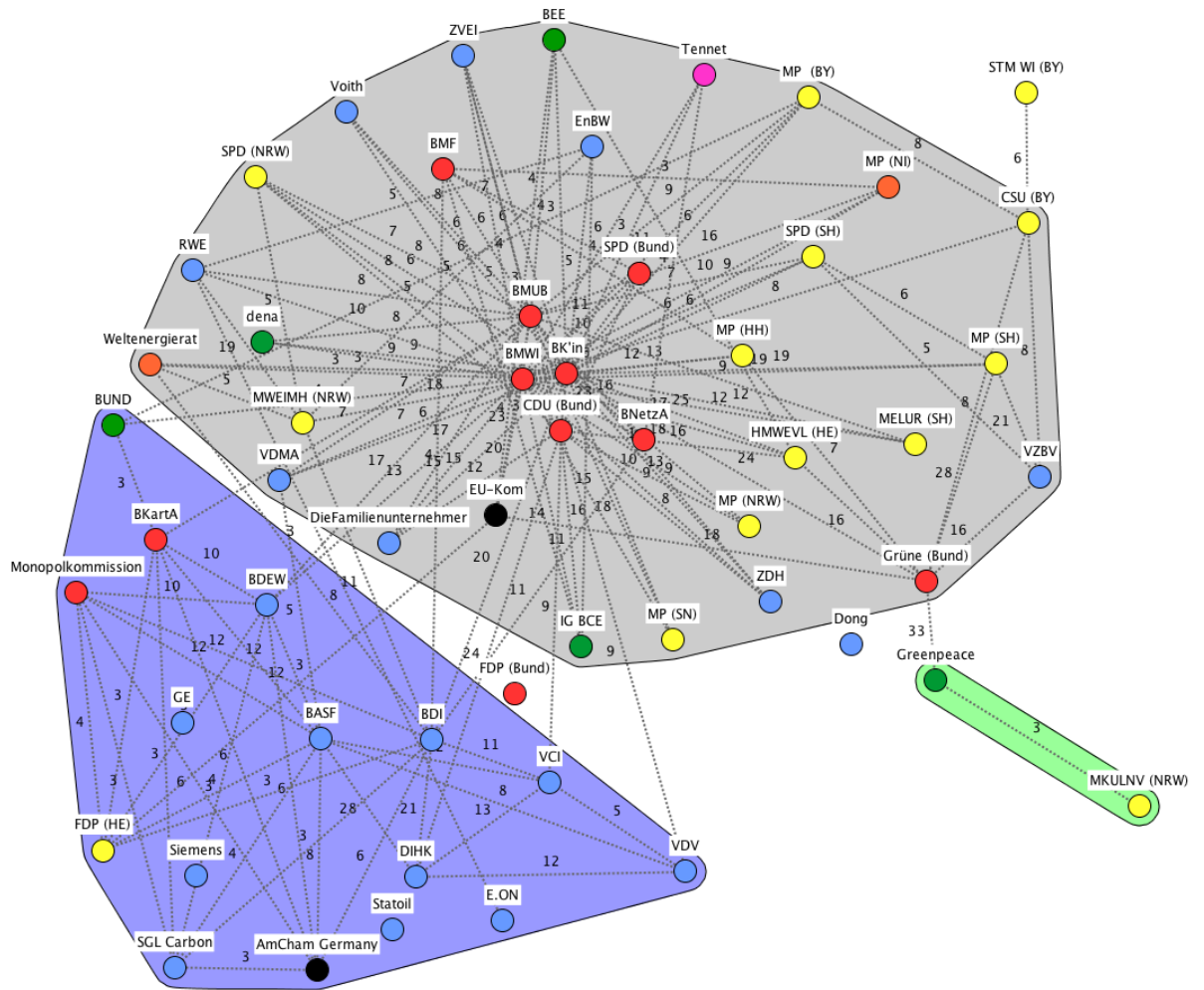


Figure 31: Discourse coalitions in the network for the period 01/2013-07/2014. Frequency >4; Girvan-Newman clustering coefficient >0,35, small numbers=link weight (absolute).

DNA reports deviant findings for the second research period. In total three cohesive discourse coalitions can be identified for this period. Interestingly, new conflict lines evolve. After the adoption of the EEG 2014 legislation, the liberal contesters seem satisfied in their demands. The conflict with regards to policy preferences between the liberal coalition (formerly blue) and the hegemonic coalition of federal politics (formerly grey) seems resolved and they form a new hegemonic coalition of 47 actors (blue in Figure 32). Again, the coalition centres around the federal decision-makers. In contrast to the former research period, however, multi-level conflicts become obvious, as state-level decision-makers largely leave the hegemonic coalition and show deviant policy preferences. In turn, the congruence between the federal decision-makers and liberal actors is striking. Especially the BDI seems to have succeeded in connecting to government and ministry, as indicated by high link weights. Also E.ON, RWE, EnBW and Vattenfall are now backing the government’s policy beliefs.

A first contesting discourse coalition (17 actors) forms around the “greener” policy

options that had already been identified for the previous research period (green in Figure 32). In this “environmental coalition”, Greenpeace is joined by research institutes (DIW, ISE), federal actors (Ministry of the Environment, Green Party, Green Party in the European Parliament), several state-level actors and last but not least liberal actors that formerly profited from the guaranteed FIT and unlimited RES extension (BSW, VZBV, Dong). The already explained shift of responsibility for energy politics from the Ministry for the Environment to the Ministry of Economics in the 2013 coalition agreement mirrors in the network configuration. While in charge of energy politics, the Ministry of the Environment was one of the most central actors in the hegemonic coalition, after the change in mission it shifted to the contesting environmental coalition. Minister of the Environment Barbara Hendricks (SPD) publically advocates the positive social and economic effects of the Energiewende (FAZ 18.04.2015) and promotes a fast phase-out for coal plants (FAZ 20.01.2016), speaking of “necessary structural changes” (FAZ 18.04.2015). In order to mitigate climate change, she goes further and promotes the end of fossil fuels by 2050 (SZ 15.12.2015). The environmental coalition advocates a more radical transition to RES than agreed on in the EEG 2014. When asked about Germany’s ambitious expansion corridor for RES, Claudia Kemfert (DIW) stated “of course it is possible, as a matter of fact, there is no other way” (SZ 26.11.2015). As producer of wind-parks, Dong Energy is criticizing the 2014 EEG for not creating incentives for investments and not being ambitious (FAZ 16.04.2014). Carsten Körnig (BSW) sees the decentral production of solar energy by citizens endangered by the EEG 2014 and states: “Who punishes climate protection, will carry the Energiewende to its grave” (SZ 10.04.2014).

A second contesting coalition is formed by the environmental interest group BUND, state-level actors and a grassroots movement from Bavaria (yellow in Figure 32). This coalition is mainly concerned with questions of grid extension, the construction of new transmission grids from the North to the South and environmental impacts of these projects. BUND’s president Hubert Weiger rejects these projects, as he envisions a decentral Energiewende that “keeps the money in the regions instead of letting it flow to companies like RWE, E.ON or Vattenfall” (FAZ 13.08.2015). Re-municipalisation of distribution networks, distribution networks in the hands of local communities and the rejection of large transmission lines like SÜEDLINK are common political demands. Bavaria’s Prime Minister Horst Seehofer (CSU), his party and different ministries also fought the plans publically. The already mentioned “asparagisation of Bavarian countryside” (FAZ 22.06.2013) is only one rhetoric example. Their aim, however, is less a decentral energy system, than rather political opportunism, as the Bavarian public raged against the natural destruction caused by the grids. In the public

discourse, they, therefore, promoted the expensive alternative of underground cables. These findings, indicating a new importance of questions of grid extension, are in line with the findings in 5.4. Changing prioritization of issues, away from questions of financing, leads to the finding that the Federal Ministry of Finance (BMF) is not part of the network after 2014.

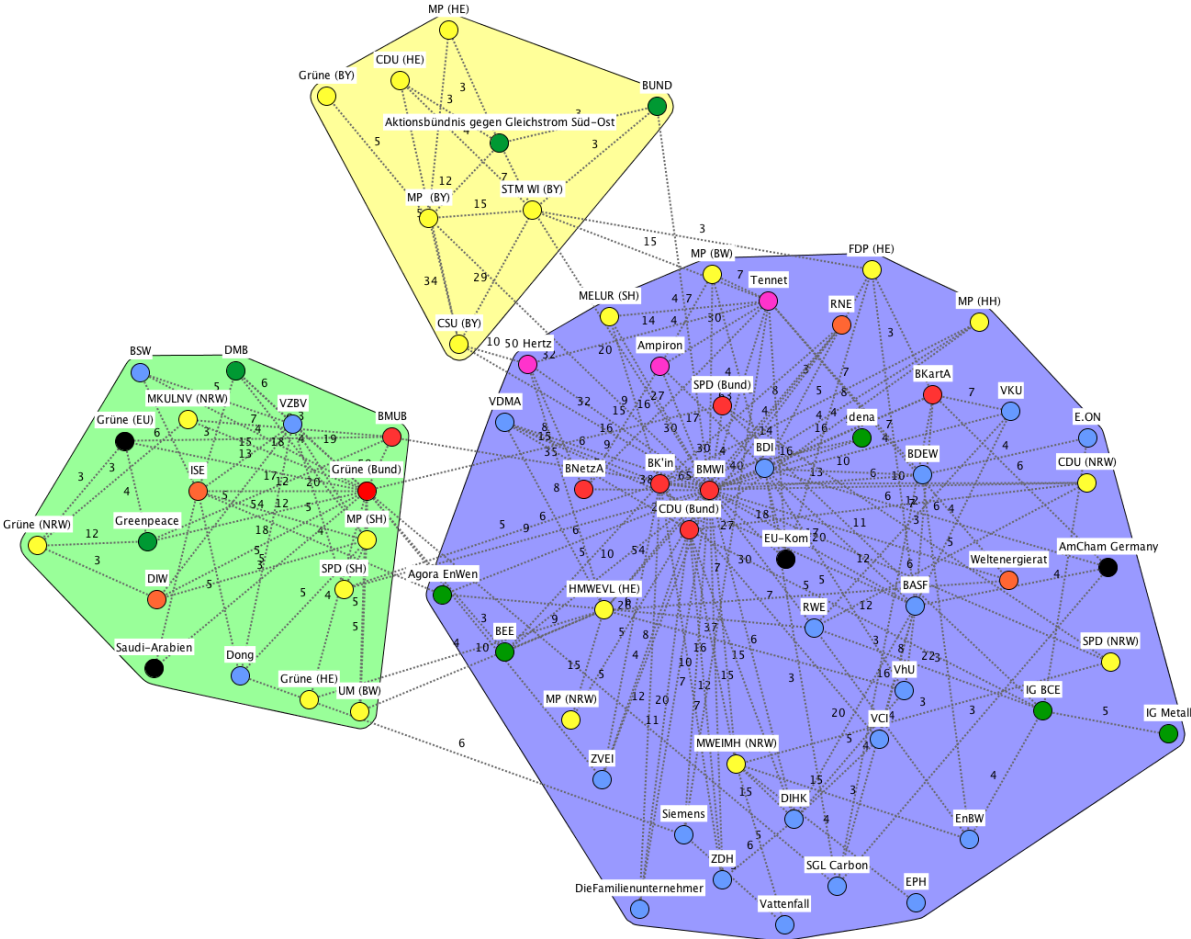


Figure 32: Discourse coalitions in the network for the period 08/2014-12/2016. Frequency >4; Girvan-Newman clustering coefficient >0,35, small numbers=link weight (absolute).

Summing up, the time before the EEG 2014 is structured around two discourse coalitions: A hegemonic political coalition and a contesting liberal coalition advocating market integration of RES and a more prominent role for conventional energy. After the adoption, the subsystem is structured around three coalitions: A new hegemonic coalition of (federal) politics and economy, defending the EEG amendment, a new environmental coalition lobbying for a faster transition to RES and a coalition of regional actors, fighting planned grid extensions.

6.5. Strategic Narratives: Issue Containment and Expansion

This section presents some of the most commonly used narratives within the discourse of German energy politics and links them to the identified discourse coalitions. As already explained, narratives are stories (1) within a setting or policy controversy that contain (2) a temporal sequence of events, unfolding (3) a plot with causal explanations and (4) cost-benefit assumptions, that are populated by (5) dramatic moments, symbols and archetypal characters and culminate in (6) a moral to the story that offers a policy solution (Jones & McBeth 2010: 329-341; Shanahan et al. 2013: 459). Typically, narratives are populated by characters that are idealized to problem-fixers (heroes/allies), stigmatized to problem causes (villains/enemies) or harmed by a problem (victims) (McBeth et al 2005; Ney 2006). While the discourse is populated by various narratives, for scope reasons, only some examples of strategic problem frames and storylines can be presented here.

With regards to the category future energy mix, different narratives are exploited. As different authors stress, Germany's environmental movement is born as a movement against nuclear power and, thus, as a movement against big companies (Morris & Jungjohann 2016; Renn & Marschall 2016). After the 2011 nuclear phase-out, the old villains were beaten but not defeated. The environmental interest groups applied their successful narratives to a new issue: Coal. While nuclear power, an inherently CO₂-emission free technology, was stigmatized for its uncontrollability and radiation, coal is criticized as a "climate sinner" due to its CO₂-emissions. Actors of the identified "environmental coalition", thus, expand the issue of electricity production by sparking diffuse fears of global warming. Ignacio Campino (Desertec Foundation), for example, offers two solutions: Either electricity is produced nearly exclusively by RES or "the world has a really big problem" (FAZ 10.04.2014). Anton Hofreiter (B90G) speaks of a "climate catastrophe" (SZ 16.07.2016). In this narrative, the producers of conventional energy (RWE, E.ON, Steag, Vattenfall, etc.) are depicted as powerful and retrograde villains. Germanwatch e.V. for example voices claims that "those who create climate and health risks, should also pay for the protection of the effected humans" (FAZ 24.11.2015). A common rhetoric theme is the comparison of "old" and "dirty" coal plants to "modern" and "clean" RES. The ultimate policy solution offered by this narrative is the full decarbonisation of German energy production.

A similar narrative strategy is exploited by actors of the identified "liberal coalition". Their narrative strategy can rather be categorized as issue containment in defending the status quo. Some of the major electricity producers actually position themselves as victims of the Energiewende. Especially, the sudden and uncalculated phase-out from nuclear energy that did

not only leave the companies without their plants but also with high costs of environmental remediation is seen as “unlawful” burden and financial “time bomb” by Johannes Thyssen (E.ON) (FAZ 31.12.2015). “The companies have made mistakes but I cannot recall an industry that has been treated like that by politics. So erratic, endangering the existence”, Werner Wenning (E.ON) exemplarily summarizes (FAZ 27.12.2015). Political overregulation and the general lack of a clear political plan are said to be reasons for massive share price slumps, leading to reorganizations and redundancies. In this process, the general narrative used by the liberal coalition sees the German industry as creators of “honest work” as well as “reliable partners” that are endangered by “job-killing” policies. The commonly stated policy solution, sees the companies as “reliable” suppliers that, as a “bridging technology” to volatile RES, are needed “for years to come”. The political demands, therefore, include guaranteed payments for the provision of conventional “capacity reserves” or “back-ups”. Hence, the narrative storyline even assigns the role of the hero to the companies. Fighting against (actively evoked) threats to supply security and scenarios of large scale black outs, they contribute to the overall aims of the Energiewende.

With regards to the advantages of RES, citizen initiatives and environmentalist groups draw a similar picture of oligopolistic, market-dominating companies (villains). The narrative, however, goes further in proposing threats and villains in the international oil and gas trade. Especially, after the Ukraine-conflict, the environmental coalition was backed by different politicians, amongst them Chancellor Merkel (CDU), Minister Peter Altmeier (CDU), Jürgen Trittin (B90G), Norbert Röttgen (CDU) and Michael Fuchs (CDU), in proclaiming the need of international energy independency as a measure of geo-politics (FAZ 11.07.2013; 16.03.2014; 02.11.2016; 04.04.2014; 29.03.2014). Kumi Naidoo (Greenpeace) calls the international expansion of the Energiewende “the most important security policy impulse, Germany can provide” (FAZ 07.05.2015) The issue of energy production and consumption, thus, is expanded to geo-politics.

With regards to the categories decentralization and grids another narrative evokes ideological sentiments of community, belonging, identity and independence. Cem Özdemir (B90G) labels the Energiewende a “democratization project” (FAZ 2013f). Claudia Kemfert (DWI) speaks of a “process of democratization” (FAZ 12.06.2013). In this light, Stephan Muschick (Innogy Foundation) envisions “empowered consumers” as well as “new forms of participation” (FAZ 2015c). “Energy democracy” (Morris & Jungjohann 2016), local ownership and energy autarky are other catchphrases that can be linked to this narrative. Local communities are presented as heroes of the Energiewende, as opposed to traditional energy

producers, transmission network operators and federal politicians. Especially, with regards to the 2014 EEG amendments and its market introduction of RES these energy cooperatives are narratively presented as victims of federal policy-making. The third, “regional coalition” identified is largely utilizing this narrative to stigmatize Angela Merkels federal policies and grid extension plans. Seehofer’s (CSU) “asparagusation of Bayarian countryside” (FAZ 2013m) and Guttenberg’s (formerly BUND) comparison of the Energiewende with the destruction of Iraqi cultural sites by the terror organisation Islamic State (FAZ 2015f) are extreme cases of the narrative. They illustrate the expansion of the issue to other fields such as community building, democratization and environmental protection.

The conceptual model (also McBeth et al. 2007; Schattschneider 1960) assumed that winning coalitions are more likely to contain issues to maintain their monopoly power and losing coalitions more likely to expand issues to increase agenda-setting power. Moreover, losing coalitions are assumed to narratively highlight the costs of a policy (victim narrative), concentrate the benefits on a small interest group (villain narrative) and use intuitive symbols. Winning coalitions, on the other hand, are assumed to concentrate the costs (only few pay), diffuse the benefits (many benefit) and refrain from the use of symbols. The brief findings generally seem to confirm the assumed use of narrative strategies. In the first research period, the contesting liberal discourse coalition is presenting itself as a victim of erratic federal Energiewende policies, while the environmental actors present industry interests as villains. In line with theory, in a subsystem characterized by two evenly competing coalitions, both tend to portray themselves as losing side (victims) and others as villains to expand the issue. In the second research period, the environmental coalition and the regional coalition are more isolated and face a hegemonic discourse coalition of federal politics and industrial interests. They, therefore, use narratives that expand the issue and link it to geo-politics, empowerment, community building and environmental protection in order to increase their agenda-setting power and gain public support.

6.6. The policy agenda: Set by network dynamics?

The 2014 EEG amendment contains several policy initiatives promoted and debated in the media. Already in §1-2, defining the general aims and principles of the amendment, some of the identified conflict lines can be found. According to the paragraphs, the 2014 EEG is “transforming the whole energy production system”, “integrating the costs of external effects” in the “interest of climate and environmental protection” and “saving fossil resources”. This section summarizes the reforms more detailed and compares them to the political demands voiced on the media agenda. The most significant reforms contain (s. Figure 33-34 for a detailed overview):

Reform	Associated Conflict Line
(1) Definition of trajectories (“Aubaukorridore”) for the expansion of RES	Future Energy Mix
(2) Introduction of tendering procedures (“Ausschreibungsverfahren”) for new installed RES plants	Financing Decentralization
(3) Overall reductions in EEG support in order to accommodate to the increased competitiveness of RES and flexible cutbacks in EEG support (“atmender Deckel”) to ensure the fulfilment of the defined trajectories	Financing Future Energy Mix
(4) Direct marketing of RES	Financing Decentralization
(5) Reformed exception for energy-intensive industries from the EEG-levy	Financing

Figure 33: Most significant reforms in the 2014 EEG-amendment and associated conflict lines. Source: Own adaptation.

§3 EEG 2014 defines trajectories for the expansion of RES (s. detailed in Figure 34). The reasoning behind the definition of trajectories is threefold. Firstly, the legislator intended to obligate the industry to comply with the politically defined shares of RES on total production of 40-45% by 2025, 55-60% by 2035 and 80% by 2050 (§1). Secondly, the “unforeseen rise” in the share of renewables in the total energy production from 5% in 2000 to more than 25% in 2013, “overarching even optimistic expectations” (Gründinger 2017: 257) was to be regulated. Thirdly, the identified “liberal coalition” had repeatedly questioned to existence of a “political master plan” (Gochermann 2016: 9) for the Energiewende and criticized that inconsistent political signals hampered investment decisions. A predefined trajectory ensures investment security and sustainable business planning. It is important to notice, that these trajectories are no irrevocable caps and that further installation of plants is not forbidden by the regulator (s. “atmender Deckel” below).

By defining trajectories, the 2014 EEG gives clear indications for the identified conflict line “future of energy supply”. In 2013 and 2014 respectively, this conflict line accounted for

the highest number of concepts on the media agenda. The public debate on the future energy mix was highly controversial with concepts demanding for example the “Phase-out from coal energy”, the “Expansion of wind energy” and the “Expansion of solar energy” on the one hand as well as “State aid for gas plants”, “Conventional as bridging technology” and “Pro: Surface Mining” on the other hand. The regulator, moreover, accommodates to one of the most central concepts on the media agenda for 2013: “Clear Legal Framework for the Energiewende needed”.

For the first time, the 2014 amendment introduces tendering procedures (§55; 88). §5 EEG 2014 defines tendering procedures as “objective, transparent, non-discriminating and competitive procedures for the determination of financial EEG support”. The tendering procedures are launched as pilot projects. Exact tender volumes for wind onshore and offshore as well as for solar energy plants are to be defined after the pilot phase. The general idea is a pre-definition of annual production (in GW) for each energy source. Tenderers can then place bids, in which they state for which amount of EEG support they are willing and able to construct and install the plants. Thus, the procedures can be seen as a “market integration” of RES (§2(2)). The guiding principles behind the introduction of tenders is an overall cost-reduction (§2(3-4)).

The governmental decision to introduce tendering procedures can be linked to the identified conflict line “financing” that dominated the media agenda in 2013. Especially, the concepts “Exceptions from EEG-levy for German industry”, “Energiewende is cost-intensive”, “Energy price break” and “Energy has to remain secure and affordable” were central to the political discourse in 2013. Moreover, the concept “Market introduction of RES” was repeatedly promoted by several members of the identified “liberal coalition”. The regulations also take the identified conflict line “decentralization” into account, as the tenders are opened Europe-wide and to all kinds of tenderers (§2(6)) and aiming to “maintain the diversity of producers of RES” (§2(5)) by adopting special regulations for small plants in order to keep investments attractive for decentral actors (“Bürgerenergie”).

The 2014 EEG defines different amounts EEG support per RES source (§40-51). The political reasons for the exact amounts are complex and cannot be elaborated here. A general distinction can be made between variable support rates and fixed support rates. For variable support rates the EEG differs by plant size, generally granting more support to smaller plants. Fixed support rates make no such distinction. Aside of these defined rates, the 2014 EEG adopts reductions in EEG support in order to accommodate to the increased competitiveness of RES (§26-33). Caps and corridor-specific reductions apply for certain RES. The exact rates and reductions can be found in Figure 34. The installation of new bio mass plants is capped at annual

100 mW. If the threshold is reached, the EEG supports reduced much stronger. For onshore wind energy, as well as for solar energy, another form of cap is defined (“Atmender Deckel”). This means that depending on the fulfilment of the defined trajectories, the reductions change. If the trajectory is exceeded, the EEG support is reduced stronger, if the installation of new plants falls short it is reduced less strong.

Again, this reform can be linked to the identified conflict lines “financing” and “future energy mix”. The reform is another step to ensure cost-effectiveness of RES, while incentivising the compliance with the politically defined trajectories.

In §19-24; §34-36 EEG 2014, direct marketing is defined as the common procedure for plant owners to sell their produced energy. “Direct marketing” refers to selling RES-electricity to a third party end-user via an intermediary trader, while using the transmission networks (§5(9-10)). The price for produced electricity is given in a “market premium” determined by the specific EEG support rate minus the specific monthly market value for the respective RES. The monthly price is defined on the European Power Exchange (EPEX) spot market (§19; 34; 35). Direct marketing stands in contrast to “self-sufficiency” which means the consumption of electricity close to its production side without introduction into the transmission network (§5(12)). This option is granted in §20(2), potentially offering interesting marketing concepts coupled with block chain and other innovations. However, the regular EEG support does not apply to this form of marketing, instead prosumers have to refund parts of the EEG support to the TNOs (§61). Again, exceptions for small plants (Bürgerenergie) apply. They are excluded from direct marketing and receive fixed FITs (§19; 37; 38).

This reform can be linked to the identified conflict lines “financing” and “decentralization”. The most central concepts of this “decentralization” in 2013 and 2014 were “Energiewende has to be decentralized”, “Energiewende is a task for society as a whole” and “Democratic participation”. The direct marketing is forcing producers (with plants of a certain size) to collaborate with transmission net operators and makes them depended on EPEX and, thus, endangering decentralization.

Finally, the 2014 EEG reformed exception for energy-intensive industries and rail sector from the energy levy (§63-65). Companies in defined industry sectors pay 15% of EEG-levy for consumed electricity that exceeds 1 gW of annual consumption. The regulation is adopted to “moderate the contributions to the EEG-levy in order to ensure international competitiveness and to avoid the movement of labour to other countries”, as well as to “maintain the inter-sectoral competitiveness of railway transport” (§63(1-2)). The industry exceptions have been the most central concept in the political discourse on energy politics in 2013 and the fifth most

central in 2014. The exceptions were one of the major demands brought forward by the identified “liberal coalition” and fought by parts of the “political coalition”, who stated that “Energiewende is a task for society as a whole” and the German industry should contribute its share. Moreover, the concept can be linked to the conflict line “economic and social implications”. In promoting industry exceptions, redundancy and job relocations were a common argument utilized by actors of the “liberal coalition”.

Summarizing, the EEG 2014 contributes to a sustainable transition of Germany’s energy system. Clear political guidelines were provided with the definition of trajectories for RES which constitute a clear signal for more RES in Germany’s future energy mix. Besides this, the EEG 2014 contains many claims brought forward by the identified “liberal coalition”: The market introduction of RES, increased investment security, the reduction of energy costs, cost-efficiency in EEG support and exceptions for energy-intensive industries. Having said this, the network dynamics diagnosed in 5.6.) seem logic. For the period before the amendment, a contesting discourse coalition of liberal actors was diagnosed. After satisfying most of the coalition’s political claims, the polarization within the network decreases and the liberal actors form a hegemonic discourse coalition with the formerly political coalition. In turn, for supporters of RES, the 2014 amendment represents a backlash. Limiting trajectories, the reduction of EEG support, the introduction of tendering procedures and flexible cutbacks are reforms that hamper the immediate and potential expansion of RES. This might be the reason, why for the period after the amendment, the so labelled “environmental coalition” forms as a new contesting discourse coalition. Decentralization is another important aspect of the EEG 2014 and can be observed in several regulatory exceptions for operators of small plants. While grids are featured in the EEG 2014 (§8-18; §56-59) only minor amendments are made. Grid expansion is only mentioned in one sentence but not specified (§17) and an amendment to the EWG (Art. 6) is one of the few contributions. As such, it seems logic that a new “regional coalition” is forming after the amendment to promote questions of grid expansion.

RES Source	Trajectory	Legal Basis	Variable/Fixed EEG Support Rates	Legal Basis	Reduction Rate of EEG Support	Attender Deckel	Legal Basis
Hydro Power			Variable (3,50-12,52 Cent/kWh)	§40	0,5% annually		§27
Landfill Gas			Variable (5,83-8,42 Cent/kWh)	§41	1,5% annually		§27
Sewage Gas			Variable (5,83-6,69 Cent/kWh)	§42	1,5% annually		§27
Mine Gas			Variable (3,80-6,74 Cent/kWh)	§43	1,5% annually		§27
Biomass	Annual additional capacity: 100 mW gross	§3	Variable (5,85-13,66 Cent/kWh)	§44	0,5% quarterly	1,27% annually	§28
Fermentation of Biowaste	Annual additional capacity: 100 mW gross		Variable (13,38-15,26 Cent/kWh)	§45	0,5% quarterly	1,27% annually	§28
Fermentation of Manure	Annual additional capacity: 100 mW gross		Fix (23,73 Cent / kWh)	§46	0,5% quarterly	1,27% annually	§28
Wind Energy Onshore	Annual additional capacity: 2500 mW net	§3	Fix (4,95 Cent / kWh) First Five Years (8,90 Cent / kWh)	§49	0,4% quarterly	If exceeding: 0,5-1,2% quarterly If falling short: 0-0,3% quarterly	§29
Wind Energy Offshore	Additional capacity: 6500 mW gross until 2020 15000 mW gross until 2030	§3	Fix (3,90 Cent / kWh) First Twelve Years (15,40 Cent/kWh)	§50	by 0,5% (01.01.2018) by 1,0% (01.01.2020) 0,5% annually from 2021 onwards		§30
Solar Energy	Annual additional capacity: 2500 mW gross	§3	Variable (9,23-13,15 Cent/kWh)	§51	0,5% monthly	If exceeding: 1,0-1,8% quarterly If falling short: 0,5% quarterly When 52000 mW is reached: EEG support = 0	§31
Geothermal Energy			Fix (25,20 Cent/kWh)	§48	5% annually		§27

**"Net" refers to the difference of newly installed plants minus the plants that go off the grid, while "gross" refers to the total number of newly installed plants.

Figure 34: Detailed overview: Most significant reforms in the 2014 EEG-amendment. Source: Own adaptation.

7. Conclusion

This thesis investigated the process of agenda-setting in highly polarized and politicized governance networks. It aimed to investigate the impact of dynamics in network composition on the policy agenda. As a case study, the German Energiewende and especially the 2014 EEG amendment were chosen. Building on theory from political science, namely the Advocacy Coalition Framework, the Discourse Coalition Approach and the Narrative Policy Framework, a conceptual model was proposed to explain why some policy problems find their way onto the policy agenda, while others do not. The model stressed the importance of discourse coalitions, dynamics in network composition and the agency of policy entrepreneurs. Besides that, the media agenda was defined as a mediator and aggregator between diffuse policy problems and the policy agenda. Political stakeholders strategically use the media agenda to publically express their policy preferences or narratives and mobilize support.

With regards to the main research question, this paper concludes that the configuration of network actors impacts the policy agenda. In the case study, a bi-polar policy sub-system with two powerful and contesting coalitions – a liberal and a political coalition – was found before the 2014 EEG amendment was adopted. In their public claims the political coalition defended the status quo, while the contesting liberal coalition urged for political changes, especially with regards to the identified conflict lines financing and future energy mix. By strategically exploiting narratives, the liberal coalition positioned itself as a victim of earlier EEG legislation and the political coalition as a villain and “job-killer”. As such, the network configuration effected the 2014 EEG amendment - the powerful contesting liberal coalition succeeded in setting the policy agenda and their political claims were largely taken on to the policy agenda. The review of the policy agenda showed that, these network dynamics impact the policy agenda: Alongside the conflict line of decentralization, financing and future energy mix accounted for the most significant changes in the 2014 EEG legislation. In the period after the amendment, they give up their contesting position and join the political coalition to form a, so labelled, hegemonic coalition. This confirms the theoretical assumptions stated in the conceptual framework with regards to the formation of winning and losing coalitions. In turn, new actors position themselves as contesters – in forming an environmental and a regional coalition - and network dynamics can be observed. Network dynamics – Firstly, the formation of a hegemonic coalition that “captured” and included the liberal actors, which in their political claims were satisfied by the 2014 EEG amendment and secondly, the formation of two new contesting coalitions with new political demands - impact the most central discussion points on

the media agenda. Due to the new network configuration, the conflict lines of financing and future energy mix become less central to the media discourse and are replaced by a central debate around grids. However, the network configuration with one hegemonic coalition, dominating the subsystem, makes changes on the policy agenda unlikely and guarantees political stability.

Concerning the sub-questions raised in the introduction, several findings can be reported. Firstly, the most influential theories in the explanation of network dynamics and coalition formation based on common perceptions, beliefs, storylines or narratives were found to be ACF, DCA and NPF. Their single elements were presented and aggregated into a conceptual framework. Especially the policy subsystem, populated by a variety of interdependent actors, the operationalization of shared belief systems as the glue for discourse coalitions and the media agenda as a forum for the use of strategic narratives have been leading this research.

Secondly, causal assumptions on the role of discourse coalitions and actors in setting the policy agenda were made in the conceptual framework. In line with McBeth et al. (2007). and Schattschneider (1960), losing coalitions were assumed to rather expand the issue in order to mobilize additional support, while winning coalitions rather contain the issue to maintain their power monopoly. Linking these findings back to narratives, losing coalitions were assumed to be more likely to narratively highlight the costs of a policy (victim narrative), concentrate the benefits on a small interest group (villain narrative) and use intuitive symbols. Winning coalitions, on the other hand, were assumed to be more likely to concentrate the costs (only few pay), diffuse the benefits (many benefit) and refrain from the use of symbols (McBeth et al 2007) In subsystems with evenly competing coalitions both were assumed to portray themselves as losing side (victims) and others as villains to expand the issue. These causal assumptions can be confirmed for the presented case study. In the first research period, with two evenly strong coalitions, both the political and the liberal coalition were found to portray themselves as victims and the other coalition as villain. In the second research period, the hegemonic coalition was found to contain the issue, while the losing environmental and regional coalitions expand the issue and link it to questions of climate and environmental protection, democratic empowerment, community-building and geo-politics. However, more fine-grained analysis is needed to back these findings. Moreover, the assumed causal link between discourse coalitions and the advocacy by policy entrepreneurs has been confirmed empirically.

Lastly, the state of the art in network analysis and the “Babylonian diversity” (Börzel 1998: 253) of methods and operationalisations were explored. A necessity for more mixed-method approaches and the inclusion of culturalistic theories was found. In accommodating to

these claims, Discourse Network Analysis was found to be a fruitful addition to the methodological toolkit.

8. Discussion

Aside of the concluded findings, another contribution of this thesis lies in the application of the relatively novel method of DNA in political science. It has been proven that DNA is a powerful tool to combine qualitative and quantitative analyses in illuminating political discourses, especially when handling large amounts of (discursive) data over long research periods. It accommodates to the claims for mixed-methods and culturalistic theories in network analysis and the findings present strong indications for policy beliefs and political strategies and are of special interest for policy-makers and experts for communication and public affairs. The use of this method in political science, therefore, is likely to increase.

The presented theories have proven useful to analyse processes of coalition formation, strategic communication and network dynamics. However, this paper's findings question some of the theoretical key assumptions. Especially, Sabatier's (1988) definitions of policy change cannot be confirmed in the light of the presented findings. Sabatier assumes networks to be more or less stable over the course of a decade and major change to be caused by external effects, rather than by network internal dynamics. While the 2011 Fukushima nuclear catastrophe, that led to the German phase-out from nuclear energy, represents such an external effect, the 2014 EEG amendment lacks a comparable change event. The policy change towards more market economy for RES are not caused by enlightenment and policy learning, the conditions for minor policy change, but rather by the strategic use of narratives and network dynamics. The presented networks, moreover, showed much more frequent dynamics than assumed in the ACF. For the 2014 EEG amendment, Hajer's (1993) discourse structuration and discourse institutionalization seem better explanations.

The findings presented above, however, have to be interpreted in the light of methodological shortcomings (s. 4.5.), in particular sample limitations (newspaper selection, article selection, choice of data source, definition of research period), reliability limitations (inter-coder reliability) and validity limitations (media biases, internal validity threats during coding and visualization, operationalization of the policy agenda). While the author is confident to have overcome most of these methodological hurdles, especially the issue of media biases has to be stressed. The discourse in the media reflects societal trends and conflict lines, however, it draws a distorted picture of reality (cf. Ortiz et al. 2005; Bennett 2012; Larsson 2002). As such, the empirically found causal effect from the discourse to the policy agenda is threatened by this bias. Does media "live a life on its own" (Jaeger 2006: 87, own translation), while personal contacts in "epistemic communities" (Haas 1992) of politicians, bureaucrats and

interest groups set the agenda in a form of “inside advocacy” (Baumgartner et al 2009)? The conceptual model deliberately excluded these forms of agenda-setting from the analysis. The conceptualized media analysis would then draw a distorted picture of the discourse and overestimate the causal importance of media discourses and network dynamics on the policy agenda.

The presented case study can shed a first and cautious light on these questions. For the adoption of the EEG 2014, multiple identified concepts on the media agenda were actually taken over by politicians. The causal relationship, however, remains unclear. Is policy-making triggered by network actors, promoting policy problems and solutions in the media? For the investigated period before the 2014 amendment, it might seem like the former was the case. The formation of contesting discourse coalitions and their dynamics were found as the cause for changes on the policy agenda. A liberal coalition promoted policy solutions and pressured the government to make legislative amendments. Or do upcoming policy-windows trigger public and strategic positioning of network actors? In the period after the 2014 amendment, a central piece of legislation is the Bundesbedarfsplangesetz 2015, the central instrument for identifying necessary investments into grid infrastructure and grid expansion. With the legislative change approaching, new network dynamics can be observed as a regional and an environmental discourse coalition form. Moreover, the formerly less central conflict line “grids” and its concepts take over the political discourse and replace formerly more central conflict lines. Thus, the analysis indicates that network dynamics are both dependent and independent variable in explaining changes in the policy agenda and policy changes can be preceding and causing these dynamics.

Recommendations:

This thesis offers a number of findings that have implications to a broad group of political actors in the field of energy politics. In order to back the presented findings, however, further research should be conducted using the DNA as a method to illuminate the impact of network configurations on the policy agenda. For example, the research period could be extended until 2017 in order to investigate how the reported changes in the second research period impact the adopt the publically less controversial 2017 EEG amendment and compare the findings to the conclusion this paper presents. Especially, the assumed stability associated with the “capturing” of the liberal coalition and the relative weakness of the new contesting coalitions, has to be confirmed empirically. Likewise, the method should be applied to other policy fields in order to investigate, whether the presented findings can be generalized or

whether they are limited to the investigated policy subsystem of energy politics. To ensure higher validity, these replication studies should try to overcome the methodological shortcomings of this research, especially with regards to the operationalization of the variable “policy agenda”. After all, this research comes with the common advantages and drawbacks of a case study design: While an in-depth analysis allows for detailed empirical findings, only the investigation of additional cases allows for generalization and the assumption of causality for the reported correlations.

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Appendix

As mentioned several times throughout this thesis, the empirical findings presented originate from a student project started in 2016 at the University of Konstanz (Germany). As a group of students, we decided to take on the inevitable topic of energy politics from a new perspective. Ever since the nuclear catastrophe in Fukushima, resulting in the German phase-out from nuclear power, the German “Energiewende” and its developments have been ubiquitous in political debates, the media, public discourse and academic research. Less, however, had been done to present a systematic long-term perspective of the political processes that underlie the ambitious political project.

Therefore, the project “Energienetzwerke” was founded and an information session was launched for interested students. Two students, Joschua Seitz (University of Konstanz) and Matthias Frey (University of Bremen), initiated the project and volunteered as project leads, managing the communication within the team, as well as organizing all workshops and meetings. A surprisingly large number of students was interested in contributing to the project. Together with me, in total, 15 team members contributed to the coding process, with each coder contributing a more or less equal share of time to the generation of our dataset (7 coding sessions of 5-10 hours). “Energienetzwerke” is student-owned and independent of any university or department. As a matter of fact, to pursue their master degrees, the collaborating students were spread over the world and collaborated mostly via Skype.

Our research project received attention and upon application we got awarded a one-yearly funding by the “Think Lab Energie, Gesellschaft, Wandel”, a *Stiftung der deutschen Wirtschaft (sdw)* and *Innogy Stiftung für Energie und Gesellschaft* initiative. The funding allowed us to host project-internal information sessions, coordinate the development of our research project, attend training and qualification work-shops offered by the Think Lab and cover our travelling costs. The funding came with some obligations. We conducted a project report and several smaller reports and presented the findings to the funding institutions. Pia Buschmann from the Think Lab joined the project lead to coordinate between the team and the foundations.

This thesis draws from the dataset that was coded collaboratively by all team members. The research question, as well as the case study, however, are totally independent from the project work and have been conducted by the author alone. Over the course of nearly a year, the project team coded 4097 newspaper articles, thus, creating the biggest and most comprehensive DNA dataset on German energy policy we are aware of. The dataset contains information on energy production, as utilized in this thesis, as well as various other subtopics of the German energy transition, such as mobility, agriculture, foreign policy, etc. Therefore, the dataset allows for several, very different research endeavours. By the time writing, two other major research projects have been carried out on the basis of the “Energienetzwerke”-dataset. In their BA theses, Micha Fleck wrote on cleavages in German energy politics, while Jakob Kaltwang analysed the impact of the Krimea crisis on German energy imports.

- Fleck, M. (2017). Konfliktlinien in der deutschen Energiewende. Bachelor Thesis: Universität Konstanz.
- Kaltwang, J. (2017). Die Krimkrise und der deutsche Diskurs zur Energiepolitik. Bachelor Thesis: Universität Konstanz.

Especially, Jakob’s thesis illustrates, how broad the raw dataset is and how many different research questions can be formulated and answered by the method of DNA.