

The German Energy(*Half*)Turnaround

An Analysis of Soft-Power Mechanisms that Shape the German Energy Transformation

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Master Thesis Series in Environmental Studies and Sustainability Science,
No 2013:021

A thesis submitted in partial fulfillment of the requirements of Lund University
International Master's Programme in Environmental Studies and Sustainability Science
(30hp/credits)



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Submitted May 18, 2013

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Abstract

At present climate change, diminishing fossil fuel resources as well as an ever-increasing hunger for energy count among the biggest unresolved sustainability challenges of the 21st century. Germany claims to be one of the first industrialized countries that are addressing this triple challenge by transforming their traditional electricity supply to renewables. Nevertheless, scientific experts are concerned that the German *Energiewende* (in English: energy turnaround), similar to other energy transformations, is destined to turn into a half-hearted technological fix instead of a far-reaching energy revolution, as it does not foster *energy efficiency* and *sufficiency*. Against this problem context, the thesis aims to uncover the mechanisms that lead to this unsatisfactory approach to sustainability. In doing so, the thesis first establishes with the help of *framing method* which sustainability perspective is underlying the *Energiewende* agenda. On this basis, Steven Lukes' *three dimensional view of power* is guiding the qualitative research to show how *mechanisms of soft-power* shape the *Energiewende* agenda and prevent alternative sustainability perspectives from gaining ground. In a final step, Jürgen Habermas' concept of *new social movements* is employed to identify promising *mechanisms of resistance* that are valuable to broadening the *Energiewende* agenda and to seizing its full potential. The thesis' findings highlight the significant contribution of recent social and political theories to sustainability science for understanding the deeper dynamics of sustainability transformations, and the need to base political agendas on a *broader informational basis* of sustainability perspectives.

Key words: *Energiewende, energy transformation, energy efficiency, sufficiency, power, social movements*

Word count: 15.202

Acknowledgements

Thanks to Turaj, the most inspiring teacher I have ever met. Thanks for always supporting me, for listening to my ideas, and for developing and challenging them. Thanks for opening a world of theory to me that is as exciting, captivating and emotionally rousing like a thriller. Thanks to Henner for motivating me on the long road of thesis writing and for helping me to access a complex topic like the German Energiewende. Thanks to Helen and Leon for being my lovely study companions from near and far.

Thanks to all interview partners for sharing their knowledge and perceptions regarding the Energiewende with me, particularly on a contested issue like power.

Thanks to my parents for always supporting and believing in me. Thanks to Antonio for bringing magic and wonder into my life. Thanks to the girls for making living in Malmö an unforgettable experience. Finally, thanks to my friends at LUMES who made these two years not only a very educational experience but also a culinary and extraordinarily fun one.

List of Abbreviations

BAFA = Bundesamt für Wirtschaft und Ausfuhrkontrolle,
Federal Office of Economics and Export Control

BMJ = Bundesministerium der Justiz;
Federal Ministry of Justice

BMWi = Bundesministeriums für Wirtschaft und Technologie,
Federal Ministry of Economics and Technology

BMU = Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit,
Federal Ministry for the Environment, Nature Conservation and Nuclear Safety

BPA = Presse- und Informationsamt der Bundesregierung,
German Federal Press Office

BUND = Bund für Umwelt und Naturschutz Deutschland,
Friends of the Earth Germany

CA = Communicative Action

CDU = Christlich Demokratische Union,
Christian Democratic Union

CR = Communicative Reason

DENEFF = Deutsche Unternehmensinitiative Energieeffizienz e.V.,
German Business Initiative for Energy Efficiency

EEG = Erneuerbare-Energien-Gesetz,
Renewable Energy Sources Act

EU = Europäische Union,
European Union

FDP = Free Democratic Party,
Freie Demokratische Partei

IEA = Internationale Energieagentur,
International Energy Agency

INSM = Initiative Neue Soziale Marktwirtschaft,
Initiative for New Social Market Economy

IR = Instrumental Reason

NSM = New Social Movement

SRU = Sachverständigenrat für Umweltfragen,
German Council of Environmental Advisors

TT = Transition Town

TTI = Transition Town Initiative

TTM = Transition Town Movement

UBA = Umweltbundesamt,
Federal Environment Agency

VCI = Verband der Chemischen Industrie,
Chemical Industry Association

WCED = World Commission on Environment and Development

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1. Introduction

At present climate change, diminishing fossil fuel resources and an increasing hunger for energy count among the biggest unresolved sustainability challenges of the 21st century (Boyle, 2003). Germany claims to be one of the first industrialized countries to inaugurate a change of direction towards a new energy political era (Federal Ministry of Economics and Technology [BMW] and Federal Environment Ministry [BMU], 2010). In order to achieve this major shift the country aims to meet its energy demand with a 100% renewable energy supply (Ibid.). According to the Government's *Energy Concept* (2010) the energy turnaround – in German 'Energiewende' – has to fulfil the threefold requirement of economic viability, secure energy supply and environmental sustainability (Ibid.). Central to the latter requirement is to address climate change by achieving at least an 80% reduction in greenhouse gas (GHG) emissions by 2050 as compared to GHG emission levels in 1990 (Ibid.).

Against the background of this ambitious endeavour, the thesis is going to explore how a 'weak' understanding of sustainability, which is the mainstream policy approach to sustainability challenges in industrialized countries, and various soft-power mechanisms provide a rigid frame to the way the Energiewende is communicated, discussed and implemented. The thesis will show that although the Energiewende seems to be established on a widely-shared consensus in Germany, certain themes such as energy efficiency and sufficiency are inadequately represented in its agenda. The qualitative research approach will reveal that the marginalization of such themes indicates that the interests and values of the voices behind these themes are not granted an appropriate hearing. It will be argued that the agenda has to be more open towards these aspects, if the Energiewende shall not be destined to turn into a 'half-hearted fix' instead of a far-reaching sustainability transformation.

1.1. Research Problem: Untapped Energiewende Potentials

The ambitious case of the German Energiewende serves as an illustrative example to study the underlying dynamics of sustainability transformations. Next to Germany, many other industrialized countries in the world are presently trying to address the triple sustainability

challenge, mentioned at the beginning, and to transform their incumbent energy system into a less unsustainable one. Despite of such efforts, it seems that these energy transformations are commonly inclined to represent a 'mere' switch from conventional energy sources to renewables ones, rather than a serious attempt to reduce energy consumption and to address the underlying mechanisms that have so far prevented it. The following illustration gives an example of how the German Energiewende is currently remaining below its potentials.

In an open letter dated 19th January 2012 addressed to the German government and the Parliamentary Committees for the Economy and the Environment a group of experts from leading German science institutes warned of a failure of the ambitious Energiewende (Pehnt et al., 2012). The experts criticized that certain Energiewende-themes such as the power grid expansion, electro mobility, and the constructions of new power plants currently receive high political attention and financial investment, while at the same time topics such as energy efficiency and energy saving remain untouched, irrespective of the economic, societal, and environmental advantages they carry. They stated clearly that "the reduction in the demand for energy is an indispensable precondition that the remaining energy demand can be faster and more cheaply covered by renewables" (Ibid., p. 1). Likewise, global and national energy scenarios and reports suggest that climate and natural resource protection cannot be sufficiently addressed without effective energy efficiency and energy saving strategies (Kaschenz et al. 2007; German Council of Environmental Advisors [SRU], 2011; International Energy Agency [IEA], 2012).

Further, the SRU (2011), the scientific advisory board of the German government, explicitly highlights the potential lying within energy efficiency and energy saving measures in order to address the threefold requirement of the governmental *Energy Concept* more effectively. In support of that Kaschenz et al. (2007) show that German energy consumption and production is marked by a slight, but continuous growth trend. According to the authors, between 1993 and 2007 the increase in the electricity generation through renewable energies was unable to balance the increase in the energy consumed; the latter, in turn, counteracted the effect of the measures taken to reduce GHG emissions in the realm of electricity generation (Ibid.).

Thus, the fact that energy efficiency goals are incorporated into the *Energy Concept* shows that it has been formulated ambitiously. Yet, it illustrates as well that the political agenda for the Energiewende and related political strategies are presently not far-reaching enough. The scientific experts' critique shows the inconsistency regarding the political goal statement in

the *Energy Concept* on the one hand, and actual political measures and discussions on the other hand. The problem that is derived from this illustration is that the Energiewende is currently discussed and framed in a short-sighted and narrow manner that does not sufficiently address those themes carrying the chance to seize the full potential of the Energiewende.

1.2. Contributions to Sustainability Science

From a sustainability science point of view the central contribution of the thesis is to demonstrate the way in which soft-power mechanisms hinder scientific knowledge to create change directly. As stressed by Boda and Faran (2013) “the *unevenness* between the immense growth of scientific knowledge about sustainability challenges like climate change and the meager translation of this knowledge into more sustainable social practices” is paradoxical (p. 4). This “science-society-gap” implies at the same time that the simple diffusion of such knowledge is insufficient to transform unsustainable practices and structures (Ibid., p. 2). In order to gain better understanding of the forces that drive the widening of this gap, Boda and Faran (2013) demand a better integration of social sciences into sustainability science. Based on this argument, the thesis will draw from the ‘toolbox’ of recent political and social theories in order to uncover relevant mechanisms of power that prevent more sustainable practices from gaining ground.

As a second contribution, the thesis intends to contribute to sustainability science as a research programme by employing a critical approach to sustainability challenges of contemporary societies using the topical case of the German Energiewende as an example. Jerneck et al. (2010) stress the combination of problem-solving and critical approaches to sustainability science as central to the research field. In order to bridge critical and problem-solving research Olsson and Jerneck (2011) suggest reframing as a useful tool. Reframing is going to be central to answering the research questions.

1.3. Overarching Research Objectives and Questions

The overarching aim of this research is to show, using the example of the German Energiewende, that mechanisms of power are significant drivers that, on the one hand, cause current energy transformations to remain below their potentials failing to address the triple sustainability challenge appropriately, and that, on the other hand, prevent more far-reaching practices from being implemented.

Objective 1:

As a first aim the thesis aims to show by employing Steven Lukes' three-dimensional view of power how soft-power mechanisms prevent knowledge about sustainability challenges from bringing about less unsustainable social practices. With special regard to the German Energiewende, an examination of the Energiewende agenda and discussion through the lens of Lukes' theory aims to demonstrate how *power mechanisms* based on *agenda control* prevent ideas and practices that carry more far-reaching solutions to the triple sustainability challenge from coming up.

Objective 2:

A second aim of the thesis is to identify promising *mechanisms of resistance* that can potentially contribute to the bridging of the *science-society gap* by using Jürgen Habermas' concept of *new social movements*. In the case of the German Energiewende, Habermas' theory is meant to show how certain *mechanisms of resistance* carried by new social movements can contribute to a broadening and opening of the political agenda and discussion regarding the Energiewende. These mechanisms will be also represented as carrying valuable ideas that could eventually re-direct the Energiewende onto a less unsustainable pathway.

In order to address these aims, the following research questions (RQ) will serve as a guideline to the study:

RQ1: What is the sustainability perspective that informs the Energiewende agenda?

RQ2: Why is the Energiewende agenda and discussion attached to specific themes, interests, and structures, while others are being marginalized?

RQ3: How to generate a more open and reflexive agenda and discussion that can bring the Energiewende onto a more sustainable pathway?

Finally, it also has to be outlined what the thesis does not and due to its limited space and scope cannot aim for. Although the thesis is implicitly criticizing the insufficient and narrow agenda of current policies to address overarching sustainability challenges, it focuses itself on the realm of electricity, because this theme is presently topical in Germany. Admittedly, however, it would have been equally relevant to study the issue for example with an emphasis on the special dynamics in the mobility/transport sector.

1.4. Roadmap for the Reader

The thesis is structured according to the logic of the RQs which build onto each other as indicated in Figure 1 below. In order to establish a starting basis for the main analysis Chapter 2 employs Chong and Druckman's (2007) *framing method* to identify the predominant frame in communication for the Energiewende agenda (RQ1). The chapter also presents a general typology of sustainability perspectives that could hypothetically have informed the Energiewende agenda. Consecutively, Chapter 3 contains a brief introduction to Steven Lukes' (2004) and Jürgen Habermas' (1981) theoretical concepts that are relevant

for the main analysis. Meanwhile, Chapter 4 explains how the theoretical concepts have directed the fieldwork and methods of data collection and analysis. For readers who are unfamiliar with the current German energy-political system, relevant background information will be provided in Chapter 5. Subsequently, Chapter 6 presents the major conceptual model and analysis, discussion and results. While the diagnostic part of the analysis based on Lukes addresses RQ2, its prescriptive part based on Habermas deals with RQ3. Chapter 7 concludes by drawing on the wider implications of the research and by highlighting further research directions.

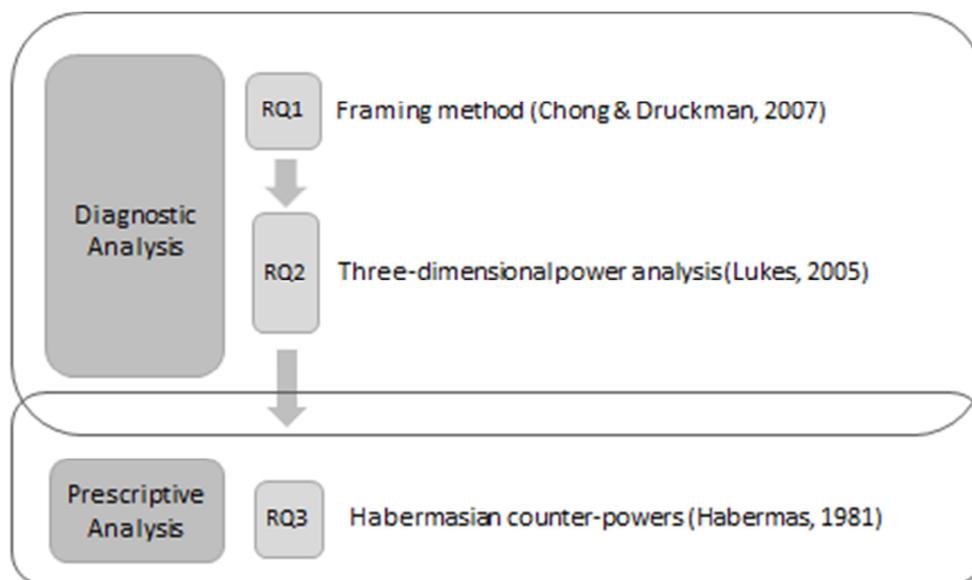


Figure 1: Display of the thesis structure. Developed by the author, 2013.

2. Sustainability Perspectives Informing the Energiewende

The succeeding sections serve to address RQ1, representing a starting basis for the research. After introducing the method that helps to identify the predominant frame in communication of the Energiewende agenda, a brief overview on the generally existing perspectives on sustainability is given as a means of orientation. Subsequently, a framing analysis of relevant policy papers will help to reveal which sustainability paradigm informs the Energiewende agenda and also offers first arguments why this is the case.

2.1. Identifying Frames in Communication

According to Chong and Druckman (2007) framing is defined as “the process by which people develop a particular conceptualization of an issue or reorient their thinking about an issue” (Ibid, p. 104). Therewith, framing is located in the general democratic process through which politicians and other opinion leaders are connected to the public, mainly through mass media (Ibid.). Based on their research experience, the authors recommend a 4-step-method to identify a frame in communication (Ibid., pp. 106-107, see Figure 2 below). The approach was identified as useful, because RQ1 requires revealing how the Energiewende in Germany is being communicated in an analytical and objective way. Besides, the theoretical groundwork of Chong and Druckman’s (2007) method and concept of framing fit well the political theory approach and power analysis employed for RQ2.

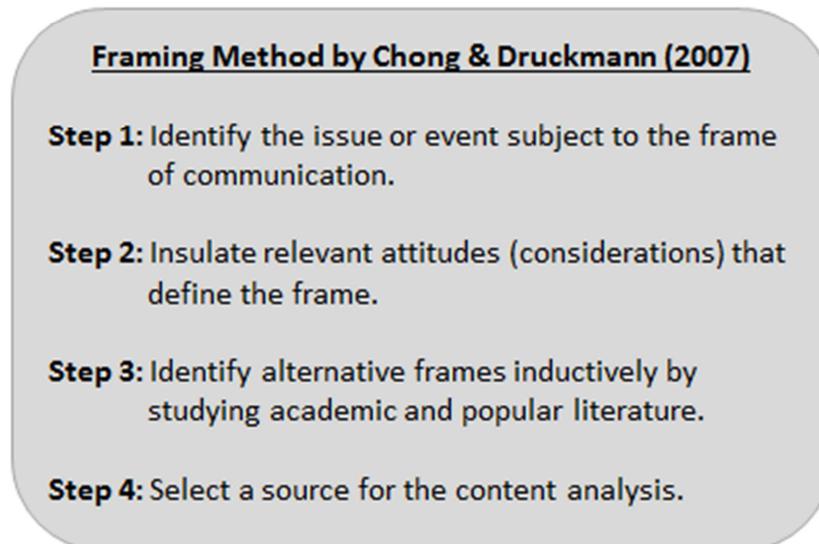


Figure 2: Display of Chong & Druckman's framing method. Developed by the author, 2013.

For the purpose of this preliminary framing analysis the government's *Energy Concept* (BMU and BMWi, 2010) has been selected as major official policy source, because it contains the overarching guidelines for the *Energiewende*. To complement the examination, several other relevant policy documents are considered as well (e.g. *Benchmark Paper* – German Federal Press Office [BPA], 2011; *Monitoring Report* – BMU and BMWi, 2012). The framing analysis is mainly a *conceptual* one that focuses on examining the existence of certain concepts of sustainability in the respective documents (Busch et al., 2012). Before presenting the analysis' outcome, the next section will provide an overview of the most common perspectives on sustainability that could hypothetically have served as informational basis to the German *Energiewende*.

2.2. A General Typology of Sustainability Perspectives

The Brundtland Report (World Commission on Environment and Development [WCED], 1987) defines sustainable development as meeting “the needs of the present without compromising the ability of future generations to meet their own needs” (§27). According to a typology developed by Faran (2012) there are three major perspectives on sustainability

and sustainable development that illustrate the broad range of possible approaches that can be chosen to inform policy- and decision-making. The three approaches all differ significantly regarding their general idea of what is to be sustained and what is to be developed (and how). The typology serves as a simplified display of a wide range of modified concepts of sustainability (see Table 1 below).

Table 1: Simplified typology of sustainability perspectives. Developed by the author acc. to Faran (2012).

	Weak Sustainability (acc. to R. Solow, 1992)	Strong Sustainability (acc. to H. Daly, 1991)	Human Development (acc. to A. Sen, 2004)
What is to be sustained?	Human welfare (GDP per capita)	Human Welfare (GDP per capita)	Human Freedom (welfare, yet not simply GDP per capita)
What is to be developed?	A stock of total capital (manufactured + natural capital)	A 'particular' composition of the stock of capital	Human capabilities
Principle	Perfect Substitutability of capital	Non- substitutability, complementarity	Instrumentality of economic growth/ environment
Sustainability	Intergenerational Equity	Intergenerational Equity	Intergenerational and intra-generational equity
Strategy	Economic Choice (market mechanism)	Political Choice	Social Choice
Related Approaches	e.g. Ecological Modernisation	e.g. Post-growth	e.g. Capabilities Approach (Nussbaum)

2.2.1. The Weak Perspective on Sustainability

According to Robert Solow (1992), one of the major contributors to the weak sustainability paradigm, sustainability is “an obligation to conduct ourselves so that we leave to the future the option or the capacity to be as well off as we are. Sustainability [therefore] is an *injunction not to satisfy ourselves* by impoverishing our successors” (p. 2). An essential assumption of Solow’s notion of sustainability, which is also underlying the Brundtland’s concept of Sustainable Development, is that all resources can be substituted for one

another. This suggests in turn that current generations do not owe to the future any particular composition of capital, but rather a generalized capacity to create well-being (Ibid.). The question that follows from that is what should a generation give back in exchange for the utilization of certain natural resources, if it wishes to abide by the ethics of sustainability (Solow, 1993). The basic rule that Solow suggests, in this respect, is to replace the used or used-up resources (e.g. uranium or coal) with other forms of capitals of equal value or equal shadow value (e.g. investment in cleaner technology or education) (Ibid.).

2.2.2. The Strong Perspective on Sustainability

Herman Daly, founder of the concept of strong sustainability, developed his ideas in form of a critique of orthodox economic theory and status quo-defenders. The major thesis of his book titled "Steady-state economics" is that in a finite world the unlimited growth of a part of it, such as the economy, is not sustainable (Boulding, 1993). Accordingly, Daly's (1991) concept of growth includes a notion of "[...] maturity or sufficiency, beyond which point [...] growth gives way to a steady state" (p. 98). In contrast to Solow who assumed perfect substitutability of capital (1993), Daly (2008) argues that certain natural resources are non-substitutable because they are finite and at the same time provide the fundament of the economic system. With this in mind, Daly (1991) also challenges orthodox economists' confidence into the problem-solving ability of continuous technological progress while leaving common unsustainable production and consumption patterns unchanged (Ibid.).

2.2.3. The Human Development Perspective on Sustainability

Amartya Sen (2004) who is generally supportive of the Brundtland's concept of Sustainable Development nevertheless criticises its narrow notion of human beings as having 'needs' as insufficient. For a more holistic notion of human needs, Sen proposes that one must also recognize peoples' urge and ability "to reason, appraise, act and participate" (Ibid., p. 1). Thus, he portrays people as agents "whose freedom to decide what to value and how to pursue it" goes far beyond meeting their needs (Ibid., p. 1). From this idea he derives that a focus should be placed upon sustaining peoples' freedom, rather than a particular composition of a stock of capital (Ibid.). This implies also that growth and wealth are purely

instrumental to the overarching aim of enabling people to live a good and free life they have reason to value (Anand and Sen, 2000).

The presentation of the three major types of sustainability perspectives served to outline their major characteristics and differences. It implicitly pointed to the fact that the choice of a particular perspective on sustainability is based on specific political priorities, and therefore leads to different policy strategies and outcomes. Although the paradigm of weak sustainability has become a mainstream concept to inform modern industrialized countries' policies, it is important to stress that other alternative sustainability perspectives need to be considered and discussed more seriously, too, as they carry important potentials for addressing today's sustainability challenges in a promising way.

2.3. The Government's Sustainability Prioritisations Regarding the Energiewende

As will be illustrated below, the conceptual framing analysis of the three policy documents helped to reveal that the German *Energy Concept* is informed by the paradigm of weak sustainability, and ecological modernization in particular.

Ecological modernisation is understood as "systematic eco-innovation and its diffusion" and falls under the overarching paradigm ('category') of weak sustainability as according to Solow (Jänicke, 2008, p. 557; Faran, 2012). In times of increasing energy prices and fears of climate change ecological modernisation has gained popularity in environmental policy-making (Ibid.). It is widely considered a promising strategy to achieve environmental improvements as it is driven by "the market logic of modernisation and competition for innovation" (Ibid., p. 557). The continuous drive to modernise is commonly inherent to capitalist market economies of industrial countries (Ibid.). Therefore, ecological modernisation is an approach that is unlikely to meet resistance by incumbent production and consumption patterns, since it does not demand deeper structural changes.

In the subsequent paragraphs the most illuminating examples of the conducted framing exercise are given to illustrate the presence of the weak sustainability/ecological modernization concept in the political Energiewende agenda.

The terms that were found dominating the three policy documents are displayed in Figure 3.



Figure 3: Display of terms dominating the sources of the conducted content analysis. Developed by the author, 2013.

All three documents considered in the course of the framing exercise were found to employ the image of an energy policy triangle, in which the goals of environmental sustainability, economic viability and secure energy supply are presented as equally important (see Figure 4).

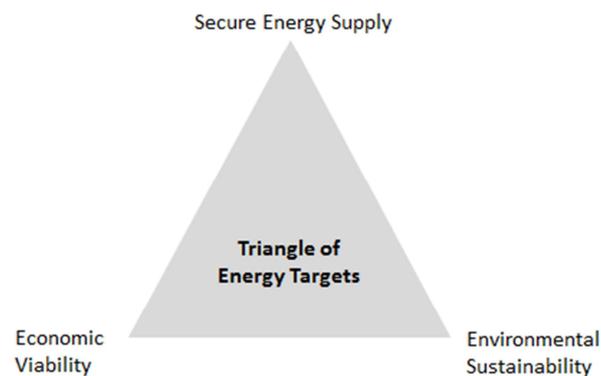


Figure 4: The German Energy Targets underlying the governmental Energy Concept (source: developed by the author, 2013).

However, the image of a triangle does not appropriately reflect the tension between these three objectives. In this regard, the logic and language of the *Energy Concept* helps to clarify how the different goals are being prioritized; namely that climate protection and environmental sustainability are pursued within the boundaries of competitiveness, economic viability, and safe energy supply. The following two quotes, translated from German into English by the author, serve as an example for this:

“Germany shall become one of the most energy efficient and climate friendly economies in the world, while keeping competitive energy prices and a high level of prosperity.” (Energy Concept, p. 3)

„The threefold energy policy goal [...] serves as guiding principle for energy policy-making to ensure that Germany will continue to be a competitive location for industry in the future. Therewith, we want to guarantee sustainable economic prosperity, future-proof workplaces, innovations and the modernization of our country.” (Monitoring Report, p. 11)

Similarly, the next two quotes show how the climate protection goal and the German Energiewende itself are considered as means that serve the demands of economic prosperity and technological progress, which is in line with the logic of ecological modernization:

„Ambitious climate protection will remain an important driving force in the transformation of our energy supply system; it sets important investment signals for innovation and technological progress.” (Benchmark Paper, p. 2)

“We have to set the course in such a way that the great potentials for innovation, growths and employment can be exploited during the transformation of the energy system.” (Energy Concept, p. 3)

A further feature that helps to point out how the Energiewende is informed by a weak sustainability paradigm is the representation of nuclear energy as “bridging technology” that enables a ‘quick and clean’ energy transformation, however, without considering reduced electricity consumption (e.g. *Energy Concept*, 2010, p. 4, p. 15; *Benchmark Paper*, 2011, p. 1). In conjunction with other conventional energy sources, whose technology is also supposed to become increasingly effective, nuclear energy is, therefore, considered to permit a safe, cost-efficient, and climate friendly energy transformation (*Ibid.*) Giving a contrasting example to this, the SRU (2011) refers to energy efficiency, a strategy based on

energy savings, as the central ‘bridging technology’ for realizing the Energiewende as fast, cost-efficient and environmentally friendly as possible (see p. 141).

To provide yet a sharper contrast that goes beyond the paradigm of weak sustainability, the sustainability perspective of the German post-growth economist, Nico Paech, can be taken as an illustration (March 6, 2013). According to Paech, for the Energiewende to be successful and far-reaching firstly material and energy consumption in all sectors had to be minimized until it served only the most essential areas in society (Ibid.). Starting from there, he explained, it made sense to ensure that the remaining need for energy is covered by renewables, whilst taking full advantage of energy efficiency measures and avoiding any further substitution of environmental capital in favour of economic growth (Ibid.). This cascade of prioritization is at odds with the government’s political agenda and growth rationale. While a post-growth economy, falling under the ‘strong sustainability category’, generally supports the idea of a shrunken industrial sector, the government’s Benchmark Paper (2011) explicitly states that the industrial sector is strategic as a major source of employment and creator of economic value. It stresses that the industrial sector is usually highly energy intensive due to its production processes and, due to international competition, is vulnerable to increasing energy prices (Monitoring Report, BMU and BMWi, 2012).

A further aspect that shows the opposed Energiewende-priorities of the Government’s sustainability perspective, on the one hand, and a post-growth perspective, on the other hand, is the theme of sustainable energy consumption. While scientific experts argue that an immense saving potential lies within changes in consumer’s behaviour concerning electrical devices (Bürger, 2009) as well as changes in consumption patterns and lifestyles in general (Tukker et al., 2006; Girod and Haan, 2009), such saving potentials are usually not addressed in the common governmental scenario studies (SRU, 2011). The potential lying within altered patterns of lifestyles and consumption is acknowledged in the policy documents – *“The energy transformation can only succeed, if the society is using energy more deliberately.”* (Monitoring Report, 2012, p. 21) – but has not yet been integrated into an official strategy.

To conclude, following the logic and prioritization presented above, the Government’s preference for a weak sustainability/ecological modernisation perspective on the Energiewende represents a consistent choice. However, if one of the two alternative main perspectives on sustainability (see Section 2.2.) had been employed to inform the government’s Energiewende agenda the idea that Germany’s position as most competitive

export-oriented industrial nation has to be maintained in order to secure the well-being of its people and environment, would have been challenged.

2.4. The Energiewende as Ecological Modernisation – A Widely Shared Consensus?

As has been shown, the paradigms of weak sustainability and ecological modernisation both reflect the market economy orientation and logic of technological progress in Germany. Combining the capitalist logic of technological modernisation with the market potential provided by environmental challenges creates plenty exploitable win-win situations that drive the applicability of the paradigm (Jänicke, 2008, p. 563). As Jänicke (2007) comments “[no] strategy of “sufficiency” or of changing lifestyles could ever have a similar potential” as ecological modernisation (p. 563).

However, the paradigm of weak sustainability/ecological modernisation also faces inherent limitations, not only in addressing environmental, but also social and economic problems. For instance, Jänicke (2007) highlights the limitedness of ecological modernisation by mentioning the failure of marketable solutions to address environmental problems like climate change, the rebound effect that offsets incremental environmental improvements through economic growth, and power-based resistance by “modernisation losers” (p. 564).

This preliminary framing analysis has helped to establish the dominant sustainability perspective for the German Energiewende and pointed out which kind of choices and priorities have led to it. As Paech criticised, the weak sustainability perspective on the Energiewende is a widely shared consensus in Germany (March 6, 2013). He goes so far as to say that it does not even require any political elite, any powerful industry, or any other sort of power exercise that fosters this sustainability paradigm (Ibid.). In fact, he points out, there are no counter arguments in the German parliament; nobody who convincingly challenges and questions that the Energiewende is based on weak sustainability (Ibid.). Whether this perception is shared or whether the political agenda for the Energiewende is actually being challenged will be addressed in the thesis’ main analysis in Chapter 6.

3. Theoretical Frameworks

In the following, the theoretical concepts that help to address RQ2 and RQ3 are being introduced.

3.1. Lukes' Radical Perspective on Power

The diagnostic analysis part of this research is largely based on the three dimensional conceptualization of power (see Figure 5 below) as presented in Lukes' (2004) book *Power: A radical view*. The range of political and social theories on power is wide and makes it a contested and "ineradicably value-dependent" concept which is not always readily observable (Lukes, 2005, p. 30; Lorenzi, 2006). Lukes' theoretical considerations have been chosen as the foundation for the analysis because they allow a holistic and subtle view on power, and offer an "explanation of how political systems prevent demands from becoming political issues or from even being made" (Lukes, 2005, p. 40). This explanation may encompass individuals, groups, and/or the operation of social forces and institutional practices (Ibid.). Through this holistic perspective on power, the analysis will be able to identify relevant mechanisms that shape the way the Energiewende is being communicated and discussed and that at the same time prevent other existing ideas and values from becoming part of the agenda.

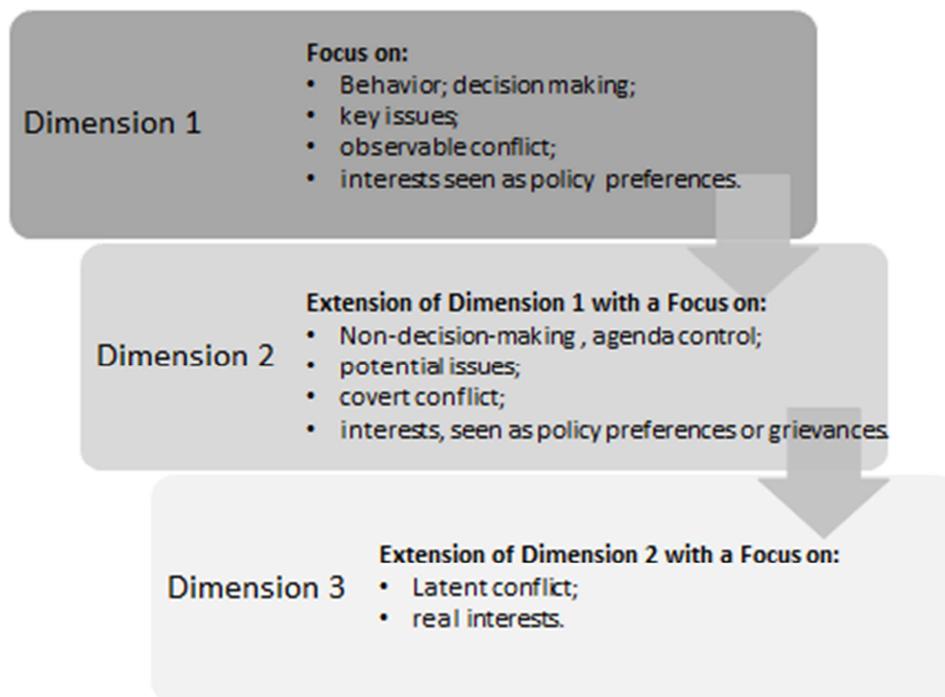


Figure 5: The three-dimensional view of power. Developed by the author acc. to Lukes (2004).

3.1.1. The Conventional View: Power Mechanisms in the Political Arena

Lukes' conceptualization of power is both an implicit critique and an extension of purely pluralist and behaviour-oriented views of power. What Lukes calls the *first dimensional view of power* is represented by pluralists theorists like R. Dahl (1961) who conceive power as intentional, active, as well as reflected in actual decisions (Lorenzi, 2006). The view focuses on behaviour in decision-making regarding topical issues in directly observable situations and conflicts. It deals with subjective interests that are seen as policy preferences which are classically expressed by political action. However, as argued by several theorists, this view of power is rather narrow and does not encompass all forms of power (e.g. Barach & Baratz, 1970; Lukes, 2005).

3.1.2. A More Critical View: Power Mechanisms beyond the Spotlights

What Lukes defines as a *second dimensional view of power* is represented by theorists like Barach and Baratz (1970). This perception of power extends the focus on decision-making of the pluralist view to non-decision-making. A *non-decision* is designed to obviate the emergence of values and interests contrary to those values and interests central to the decision-making (Lukes, 2005). Therefore it is also referred to as *agenda control* (Ibid.). The second dimension considers not only current issues and observable conflicts but also potential issues and covert conflicts that are kept out of the political arena and discussion. Potential issues are those issues that agenda control prevents from becoming topical (Ibid.). This dimension deals with subjective interests as political preferences but also grievances.

3.1.3. A Radical, but Subtle View: Imposed Consensus and Latent Conflicts

Lukes' own theoretical contribution – the *third dimensional view of power* – goes deepest. He builds onto and includes the previous dimensions, but he adds the possibility of *latent conflicts*. According to Lukes (2004), a latent conflict is present if there is a “contradiction between the interests of those exercising power and the real interests of those they exclude” (p. 28). Notably, those excluded “may not express or even be conscious of their [real] interests” (Ibid., p. 28). Therewith, Lukes includes both subjective interests and *real interests* into his view. Thus, third-dimensional power is exercised “by shaping perceptions, cognitions and preferences in a way to secure acceptance of the status quo since no alternative appears to exist or because it is seen as natural and unchangeable, or indeed beneficial” (Lorenzi, 2006, p. 91).

The subtleness of the third dimensional view of power, considered as particular strength by Lukes, represents a significant limitation to pluralists. For instance, N. W. Polsby (1963) has asked critically how one should be able to study or even prove what does not happen. Lukes' (2004) responds that it is possible to seek third-dimension-evidence empirically, although never in an entirely conclusive way. Indeed, several empirical studies exist that have successfully managed to prove the presence of the second and even third dimensional power (e.g. Crenson, 1971). How this challenge will be addressed in the context of this research is outlined in Chapter 4.

3.2. Habermas' Counter-Powers

While Lukes' conceptualization of power is providing the main framework for the diagnostic analysis (RQ2), Habermas' concepts will become relevant for the prescriptive analysis addressing RQ3. The concepts will serve to highlight specific social mechanisms found in the course of the fieldwork that carry the potential to broaden the *Energiewende* agenda and discussion. Although Lukes' conceptualization of power is equally able to provide a 'way out' of undesirable power-relations ("within the process [that has been identified as exercise of power] lies the possibility to act differently", (Lorenzi, 2006, p. 93)), Habermas' concepts of *New Social Movements* (NSMs) that are based on *Communicative Action* (CA) are more proactive in the way they tackle the problem and are therefore used as frame for the 'solution'.

In order to provide some background to the prescriptive approach of NSMs and CA, the subsequent paragraphs will briefly introduce how they are embedded in Habermas' system-lifeworld conceptualization.

3.2.1. The Systematic Colonization of the Lifeworld

Habermas considers modernity as a process of rationalization and differentiation of the *lifeworld* that leads to the evolvement of an ever advancing *system* of political and economic institutions (Thomassen, 2010). This continuous process is, according to Habermas, based on a differentiation between *instrumental rationality* (IR) and *communicative rationality* (CR) that manifests his dual concept of society as lifeworld and system (Ibid.). Consequently, society is reproduced through different media: While the lifeworld is integrated through the normative, linguistic media of CA directed at mutual, intersubjective understanding and emerging consensus, the system is integrated through the impersonal media of money and power directed towards success and efficiency (Habermas, 1987b; Thomassen, 2010). According to Habermas, CR that is based on the intersubjective exercise of CA was meant to take place in the *public sphere* (PS) of the lifeworld – a place where public opinion was formed by "private people gathered together as a public and articulating the needs of society" (Habermas, 1989, p. 176).

Against this idealized conceptualization of system-lifeworld-functioning, Habermas developed his critique of contemporary societies. He described modern societies' inclination to 'systemize' new areas, which results in the system's logic of IR *colonizing* the communicative basis of the lifeworld (Thomassen, 2010).

"Where state and society had once been separated, they now interpenetrated, as the economy became increasingly regulated and organized pressure groups invaded the administration. Corporations blurred the distinction between private and public institutions [...] Culture was ceasing to be a domain of critical reasoning, and becoming one of mere ideological consumption..." (Anderson, 2005, p. 114)

As shown in Figure 6, the encroachment of IR into the lifeworld becomes a re-enforcing loop, continuously eroding the 'counter-weight' of CR rooted in the PS.

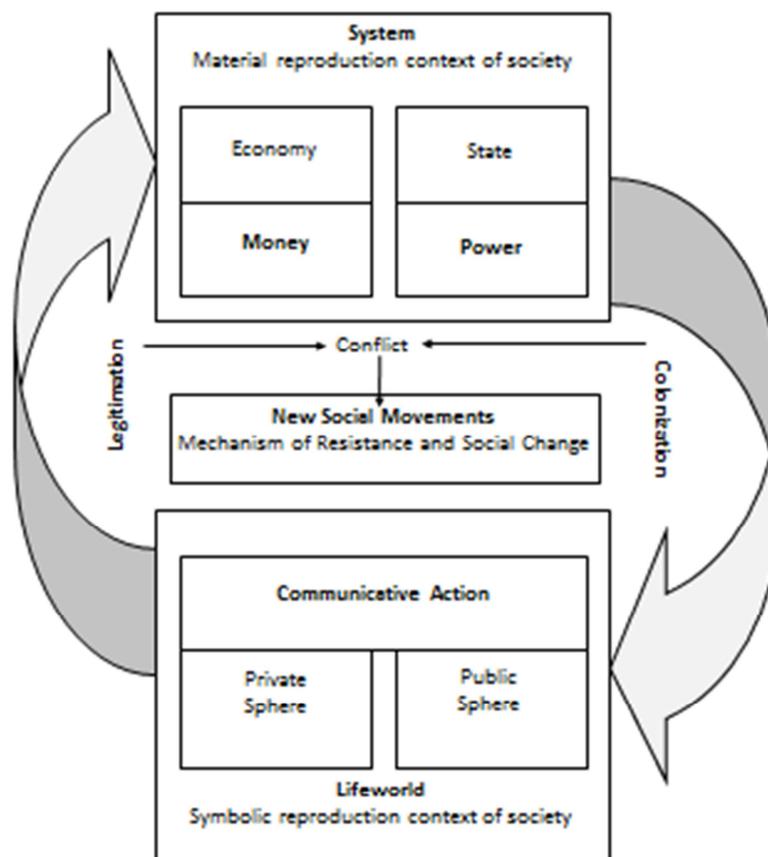


Figure 6: Habermas' system-lifeworld conceptualization, including the role of New Social Movements as mechanisms of resistance and social change. (Source: Trocchia, 2009, Habermas 1981).

3.2.2. Restoring an 'Old' Cure: Communicative Action

In contrast to Max Weber, who perceived modernity, the ever-expanding dominance of IR, as an 'iron cage' of bureaucratized capitalism that offered no way out, Habermas' twofold conceptualization of reason as CR and IR is more optimistic, which is also why it is employed for this study (Callinicos, 2007). Habermas believed in the possibility of reconstructing the lost virtues of the PS by revitalizing an old cure – CA, which he elaborated in *The Theory of Communicative Action* (1987a; b). Based on his theory on language, Habermas described how discursive CR, that underlies CA, naturally creates an intersubjectively arising, mutual understanding driven by "the unforced force of the better argument" (Habermas, 1993, p. 163). He suggested that CA could provide a remedy to the pathologies of modern societies by re-establishing the conditions for communicative actors to engage in rational, domination-free dialogue directed towards a "shared consensus" (Thomassen., p. 23). As a result, Habermas believed that a new emphasis on CR through CA, could facilitate and spur the emergence of common (lifeworld) values that Weber believed entirely lost.

3.2.3. Mechanism of Resistance: New Social Movements

Habermas presents NSMs as practitioners of CA that are capable to reconstruct value-based communicative structures which offer space for a process of re-moralization, once undermined by colonization (Habermas, 1981). In the context of the thesis, NSMs are put forward as social *mechanism of resistance* that can provide a relevant 'counter-weight' to both the colonization of the system and Lukes' *power mechanisms*.

According to Habermas, NSMs are driven by new value conflicts that "arise at the seam between the system and the life-world." (1981, p. 36). The conflicts represent an expression of what Inglehart (1979) generally referred to as *silent revolution* in values and attitudes. The movements' protest generally serves the defence and reinstatement of endangered lifestyles, or their reformation (Habermas, 1981). Implicitly, the protest is targeted against the "roles of the employed and the consumer, the client and the citizen" that institutionalize the media of money and power (Ibid., p. 36). Habermas supposed that the protest could eventually lead to a partial dissolution of these roles, paving the way for *counter-institutions*

originating from the lifeworld. He considered the counter-institutions relevant in limiting “the particular dynamic of the economic and political-administrative system” (Ibid., p. 36).

On the one hand, he expected the counter-institutions “to branch off from the economic system into a second, informal sector that no longer is profit-oriented” (Habermas, 1981, p. 37). On the other hand, he assumed that these institutions could “counter the party system with new forms of an expressive ‘politics of the first person’” that have a “democratic base” (Ibid., p. 37). As a result, Habermas laid hope into these institutions’ capacities to reintegrate formally organized areas from the system back to the lifeworld, where they would be saved “from the influence of media intervention” and would fall ‘again’ under the “mechanism of understanding which coordinates action” (Ibid., p. 37).

4. From Theory to Fieldwork

This chapter is going to present how Lukes' and Habermas' theoretical concepts are linked to the research process and data analysis of the thesis.

4.1. Operationalizing Lukes and Habermas

The sub-question below contains two major assumptions, which will guide the diagnostic analysis of the Energiewende agenda and discussion based on Lukes' three-dimensional conceptualization of power.

i) Presence of Power Mechanisms:

Are there power mechanisms at work, used by actors who have established the agenda (referred to as A/ interview set A)...

ii) Presence of Conflicting Interests and Values:

...to prevent other actors' (B/ interview set B) alternative interests and values from accessing the agenda and its discussion?

If (i) *power mechanisms* and (ii) *conflicting interests and values* can be proven to exist, there is evidence according to Lukes (2005) that the Energiewende agenda is not the result of a widely-shared consensus but actually veils a *latent conflict*.

Regarding the context of this study, it is hypothesized further that this latent conflict generally exists between *the status quo (the Habermasian system)* characterized by powers, interest/values and structures/institutional arrangements that rests on the paradigmatic foundation of weak sustainability/ecological modernisation, on the one hand, and *alternative 'counter-powers' (originating from the Habermasian lifeworld)* characterized by interests/values, structures/institutional arrangements that rest on marginal perspectives on sustainability, on the other hand.

The next section elaborates how the assumptions underlying Lukes' three-dimensional view of power, and Habermas' system-lifeworld conceptualization are being operationalized in the realm of data collection and analysis.

4.2. Research Logic: Proving Power through Distance

In order to gather data for studying the assumptions above, Stinchcombe's (2005) considerations on the importance of distances in study designs for causal theories will be incorporated. According to Stinchcombe, "the most powerful methods, when the situation allows us to use them, are those used where we can observe the differences in differences – that is 'distances' " (p. 11). To design the study in an efficient way the researcher should aim for a good sample of differences that is able to reveal sufficient information on these distances (Stinchcombe, 2005). From Stinchcombe's perspective, mechanisms usually represent a "causal connection within relatively bounded units that form coherent 'parts' of a larger structure" (p. 17). For instance, "rationality, emotions, habits, accumulated learning and competencies all may characterize either persons as members of organizations or organizations as members of markets or of political systems" (Ibid., p. 17). Thereby, data can be collected in a way that helps locating units (persons or organizations) in a larger system or structures (Ibid.).

The basic principle of Stinchcombe's (2005) methodological considerations is that causation manifests itself as a relation between a certain distance from a cause, and a certain distance from the effect (see Figure 7).

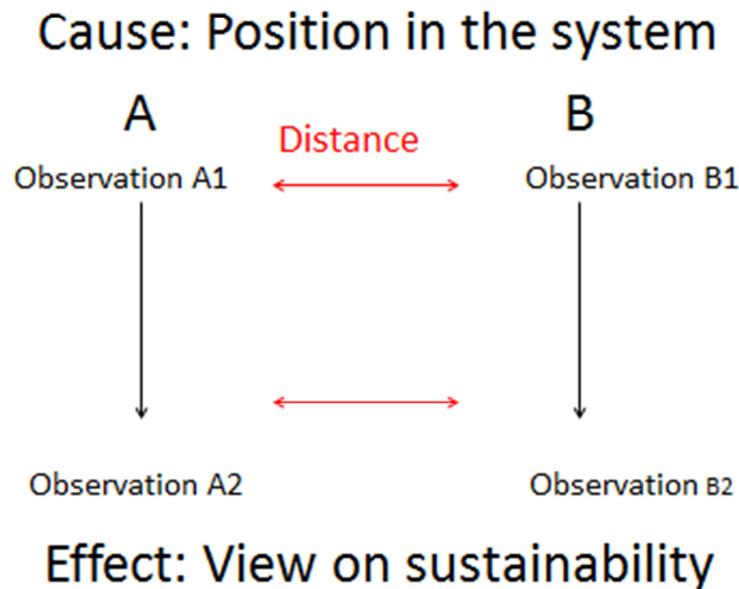


Figure 7: Display of study design based on Stinchcombe's (2005) distance principle.

The methodological challenge in this study is to relate the distance-principle to observations (Ibid.). This requires the researcher to examine the same units of analysis to measure the distance between causes and the distance between effects. It entails at a minimum two units of analysis and hence four observations (two on the cause and two on the effect, as shown is Figure 7).

Based on this logic, the interview guide is composed of two major parts (see Appendix A2: Interview Guide). Part I of the interview guide investigates the interviewee's interests in or attitude towards the Energiewende in his/her role as member of a certain organization (e.g. an industry or government authority) that in turn belongs to a larger structure or political/economic system. Part II of the interview guide serves to identify the interviewee's deeper, personal values and vision regarding the Energiewende. It is assumed at this place that Part II is able to reveal, at least to some extent, the interviewees' *real interests*. In the context of this study, the real interests of people are understood as being rooted in Habermas' twofold conceptualization of reason: CR and IR. Accordingly, to provide a basic example, an interviewee could point out in the second part of the interview that he/she has reason to save electricity for the sake of saving money (indicating IR guiding individuals'

choices towards utility-based ends) and/or for the sake of saving the environment and the climate (indicating CR guiding individuals' choices based on values pursued as an end in themselves).

To conclude, in the realm of this study design the cause depicts the interviewees' *position in the system*, while the effect is represented by the interviewees' *view on sustainability*. To note, which feature is representing the cause and which one the effect is basically context-dependent and disputable – for example one could equally argue that the *view on sustainability* influences an individual's choice of employment. However, since the data collection and analysis is based on Lukes' three-dimensional view of power that also includes the option of structures shaping individuals' perceptions, it is reasonable to assume for now that an individual's institutional role in the system influences his/her perspective on sustainability.

The next section introduces the basic components and data sources of the fieldwork and outlines how Stinchcombe's logic and the theoretical concepts are influencing the interview set-up.

4.3. Methods for Data Collection and Analysis

The research consists of a triangulation of methods including a participant observation, 31 semi-structured interviews (composed of 21 expert interviews and 10 pedestrian interviews), as well as a study of academic and non-academic documents to enable a cross-checking of findings (Bryman, 2008, p. 379).

The fieldwork was conducted in Berlin due to practical and strategic considerations. Firstly, because the required interview sets A and B that were necessary to establish Lukes' power mechanisms and Habermas' resistance mechanisms were readily available in Berlin. Secondly, because Berlin as Germany's capital represents an interesting study scene for the *Energiewende*: It is the centre for the up-coming governmental election in 2013 and therewith a strategic place for citizen initiatives and NGOs (which are part of interview set B) to voice their concerns regarding the current energy policy and *Energiewende* agenda. Moreover, the fieldwork included a conference visit concerning the regional *Energiewende* in Germany, located in the centre of Berlin.

4.3.1. Interviews Based on Distance and Position in the System

The required interview sets A and B were composed according to Lukes' theoretical assumptions and Habermas' system-lifeworld conceptualization, and followed Stinchcombe's (2005) research logic. Accordingly, the interviewees were selected in a way that they represented differently positioned actors in the energy-political system (see Table 2). As a consequence, interview set A was composed of interviewees who generally represented those actors/organisations that have established the Energiewende agenda or have influenced it successfully. Meanwhile, interview set B was composed of interviewees who represented actors/initiatives that are critical towards the agenda and the status quo (*the system*).

Table 2: Display of interview sets according to the two categories "Agenda-Establishers" and "Agenda-Challengers" including interviewees' identifications (either alphabetical letters or names depending on the degree of anonymisation).

<i>Interview set A:</i>	<i>Interview set B:</i>
<i>"Agenda-Establishers"</i>	<i>"Agenda-Challengers"</i>
1. Energy intensive industry; C.	1. Solar sector; J.
2. Energy supplying industry; D.	2. Energy efficiency sector; Noll
3. Transmission provider; B.	3. Transition Town Initiatives; Amelie., Thomas, Julian, Rahel
4. Public Relation Organisation; Feist	4. Citizens Energiewende-Movement; Taschner, Zuber
5. Federal Parliament; Ott	5. NGO (education, climate protection); Schmidthals
6. (BMW) and BMU; E., G.	6. Post-growth economy research; Paech
7. Federal Environmental Agency; F.	7. Regional Energiewende; Kunze

For information on sampling methods, ethical considerations and the way of conducting the interviews (e.g. use of language, structure, informed consent, recording, and transcription) please refer to Appendix A1. For detailed information on additional data sources that are not

explicitly discussed in the thesis text please go to Appendix section A1: Pedestrian Interviews, A3: Participant observation, and A4: Conference Visit.

4.3.2. Hypotheses Underlying the Interviews

Based on the theoretical concepts and study design logic discussed in the previous sections the following hypotheses were used to extract relevant results and insights from the interviews with set A and B:

Hypothesis I: The interviewees' interests as they represent their respective business/authority (Part I of the interview guide) and following from that their views on sustainability (Part II) differ between A and B. The *difference* can be explained by the interviewees' opposed/distant *position in the system* (Stinchcombe, 2005). It is assumed that persons belonging to interview set A tend to support the logic of the status quo (the system logic rooted in IR), or at least do not explicitly challenge it. In contrast, interviewees belonging to interview set B tend to explicitly challenge the status quo or are at least critical towards it, and favour an alternative view on sustainability.

Hypothesis II – correcting for the rigidness of Hypothesis I:

Interviewees who are not part of interview set B, i.e. persons belonging to set A, might still share 'lifeworld values' rooted in CR that are similar to B's and therewith opposed to the 'system logic'. In this respect, it is assumed that the interviewees may reply in two distinct roles: a) in the formal, institutionalized role as an employee/official of a certain authority or business, and/or b) as an individual that has hopes, wishes and reason to value things that go beyond his/her attitude and opinion held as an employee.

4.4. Limitations of the Study

The major limitations of the study represent particularly practical difficulties encountered during the fieldwork and in the course of the data analysis:

One important constraint represented the limited time available for field research, which also set limits to the amount of interviews that could be arranged. On the one hand, the 21 expert interviews conducted represent an appropriate selection of important actors in the realm of the German Energiewende, but on the other hand they are unable to portray the whole range of relevant actors in the energy-political system.

Further, it was difficult to gain access to all the interviewees who were considered desirable for answering RQ2 and RQ3. For instance, there was no possibility to talk to persons working at the BMWi due to its restrictive interview policy. This would have been valuable, however, because the ministry is “co-author” of the *Energy Concept*. Also, it would have been appropriate to conduct a wider range of interviews with parliamentary members in order to display the different party positions regarding the Energiewende. However, as expected, the working schedule of parliamentary members was especially tight due to the up-coming governmental elections.

Another limiting practical factor was that the interviews were conducted in German and translated consecutively into English for the purpose of communicating the research result in the thesis. Therefore, the bias of eliminating aspects of authenticity or other subtleties through the translation process was always present. Finally, due to practical reasons some interviews had to be conducted on the phone, although a face-to-face conversation would have been more appropriate for this kind of study.

4.5. Epistemological and Ontological Perspective

The understanding of epistemology underlying the thesis is in line with Habermas’ concept of *intersubjective-truth* (Habermas, 1987a, p. 392). According to this concept, knowledge is created by seeking truth in the “intersubjectivity of possible understanding and agreement” (Ibid, p. 392).

Ontologically, the thesis shares the perspective of the Frankfurt School of critical theory as advanced by Habermas. This perspective is relevant for understanding the theoretical approach of the diagnostic and prescriptive analysis in the thesis, because it suggests that system structures can be shaped and changed through ideas, i.e. through the way people think and talk about them (Mearsheimer, 1995, p. 15). Furthermore, this perspective also explains the particular value of choosing a qualitative, interview-focused research strategy

for this thesis in order to learn about peoples' different perceptions of an issue: Originating from the idea of an intersubjective truth it implicitly assumes that these perceptions, as they accumulate, will contribute to an ever-improving picture of reality.

5. Background to the Case

This chapter provides a basis of relevant information regarding the German energy-political system that is helpful in understanding the observations and arguments presented in the analysis in Chapter 6. The sections introduce the major actors, structures and respective connections that shape and form the current energy-political system in Germany. Moreover, they point to new dynamics that have been induced by the Energiewende and that increasingly challenge established actors and structures.

5.1. Powerful Substructures Setting the Stage for the Energiewende

The Energiewende in Germany is posing a challenge to the established actors of the electricity system (Kungl, 2012). Since the nuclear exit is definite, the traditional electricity mix has to change, and ideally the total electricity consumption needs to be reduced. This bears significant consequences for the energy supply industry, the energy intensive industry (e.g. chemical industry, aluminium industry, and steel industry), the grid operators, and related sectors. The actors receive pressure from governmental laws, an increasingly sensitized public, and new (more or less professionally organized) actors entering the scene such as solar companies and energy efficiency businesses (Kungl, 2012). These dynamics threaten existing power relations and institutionalised structures for action, which is particularly affecting those established actors and their investments that conventionally represent centralised and big-scale business models (Ibid.).

5.1.1. Traditional Structures and Ownership in Grid Operation and Energy Supply

There are five major transmission grid providers in Germany: 50Hertz, Amprion, TenneT TSO und TransnetBW (Netzentwicklungsplan Strom, n.d.). Formerly the transmission grid was fully owned by the energy suppliers E.ON, RWE, EnBW, and Vattenfall – the so-called “big four”, which currently cover 80% of the German electricity market (Heide, 2012). In response to continuous pressure from the EU to dissolve the energy cartel, the big four sold their

electricity grids, with E.ON being the first to do so in year 2010 (strom-magazin.de, n.d.). By separating electricity supply and distribution, the system was meant to become more transparent and competitive.

As a result of the liberalization process that has been driven by the European Union [EU] in the 1990s the majority of local electricity grids were privatised and concession contracts of usually 20 years length were signed, of which many will run out by 2014 (bewegung.taz.de, n.d.). The biggest share of the local grids got into the possession of Germany's leading energy suppliers. Therewith, these companies do not only still maintain a strong position in the energy supply sector, but also a strategically important position in the local distribution grids of cities and communities (bewegung.taz.de, n.d.).

5.1.2. The Current Electricity Mix and Dynamic Renewables Expansion

At present electricity generation in Germany is mainly based on conventional energies, which amount up to a total of 72% (AG Energiebilanzen, BMU, 2013). In recent years, renewables have experienced a highly dynamic development and managed to achieve a total share of 22%, of which wind and biomass currently represent the biggest proportions (Ibid.).

The rapid expansion of renewables is to a significant extent due to the German Renewable Energy Sources Act (EEG), the centrepiece of German renewable energies policy. The EEG was originally released in year 2000, but has been subject to several amendments since then. The law's basic idea is to set economic incentives by granting governmental subsidies to renewable energy plants (Stromauskunft.de, n.d.). The EEG's major purpose is to enable a sustainable development of energy supply in Germany, especially in the interest of climate and environmental protection (Bundesministerium der Justiz [BMJ], 2009, § 1(1)). Along with that it fosters the development of technologies that serve the power generation from renewable energy sources (Ibid.).

The EEG has not only led to the growth of renewable energies in the German electricity mix, but also to the rise of new industries and businesses that contribute to the production and installation of the renewable plants. Although the leading four energy suppliers are slowly switching to large-scale renewables projects such as off-shore wind parks, the Energiewende has been originally pioneered by smaller renewable energy businesses and private investors

such as households and communities (E., February 26, 2013). Furthermore, the Energiewende has also resulted in slowly increasing dynamics in the energy efficiency sector.

5.1.3. Energy Intensive Industry in Need of Governmental Protection

Other than the big energy suppliers and grid operators, the energy intensive industry is playing a decisive role in the Energiewende – mainly because of its contribution to innovation and technology development as for instance in the energy efficiency and electricity storage realm (Verband der Chemischen Industrie e.V. [VCI], 2013). Since these industries rely heavily on highly energy intensive production processes and are at the same time competing internationally with other big players, paragraph 40 of the EEG foresees an electricity cost limitation for such businesses, including rail operators (EEG, § 40, 2000). As a consequence, such industries have been excluded from paying the EEG-apportionment (979 businesses in year 2012) that aims to finance the switch to renewables, while private households and businesses that are not privileged are shouldering the costs (Federal Office of Economics and Export Control [BAFA], 2012).

5.1.4. The Energiewende ‘Steered’ by a Liberal-Conservative Government Coalition

While the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) is responsible for overseeing the renewable energy sources, conventional energy sources traditionally fall into the realm of the Federal Ministry of Economics and Technology (BMWFi) (BMU, 2013). Since May 2012, the BMU is headed by Peter Altmaier from the conservative CDU (Wittrock, 2012). Since 2011 Philipp Rösler is Minister at the BMWFi. He also holds the position of German Vice Chancellor and is Chairman of the liberally oriented FDP (BMWFi, 2013). It is important to be aware of this division of responsibilities and which party coalition is currently in charge of the Energiewende in order to have a general idea about which political orientations are underlying its agenda.

6. Model, Analysis, Discussion, Results: Powers that Shape the Energiewende

Having provided relevant background information to the German energy-political system and new dynamics, Chapter 6 is now going to present a conceptual model, and to analyse and discuss the main findings of the study. Since a major pillar of the study is represented by qualitative interview-data that is reflecting peoples' perceptions or attitudes, many of the findings will be presented by using direct or indirect quotes from the interviews.

While the first part of the analysis (Section 6.1.) is going to address assumption i) *the presence of power mechanisms*, the second part of the analysis (Section 6.2.) deals with assumption ii) *the presence of conflicting interests and values*. Since Lukes' and Habermas' theoretical concepts have been 'interlinked' for the purpose of the study, the second analysis part will point out relevant *mechanisms of resistance* that have potential to provide a 'counter-weight' to the workings of the identified power mechanisms. It will be argued that these mechanisms of resistance can help to create a more open and reflexive Energiewende agenda directed towards a less unsustainable pathway to sustainability.

Figure 8 below illustrates how the diagnostic analysis guided by Lukes and the prescriptive analysis inspired by Habermas are interlinked with each other. Therewith, it also presents the major conceptual model that will be followed and elaborated throughout the chapter by referring to each component of it consecutively.

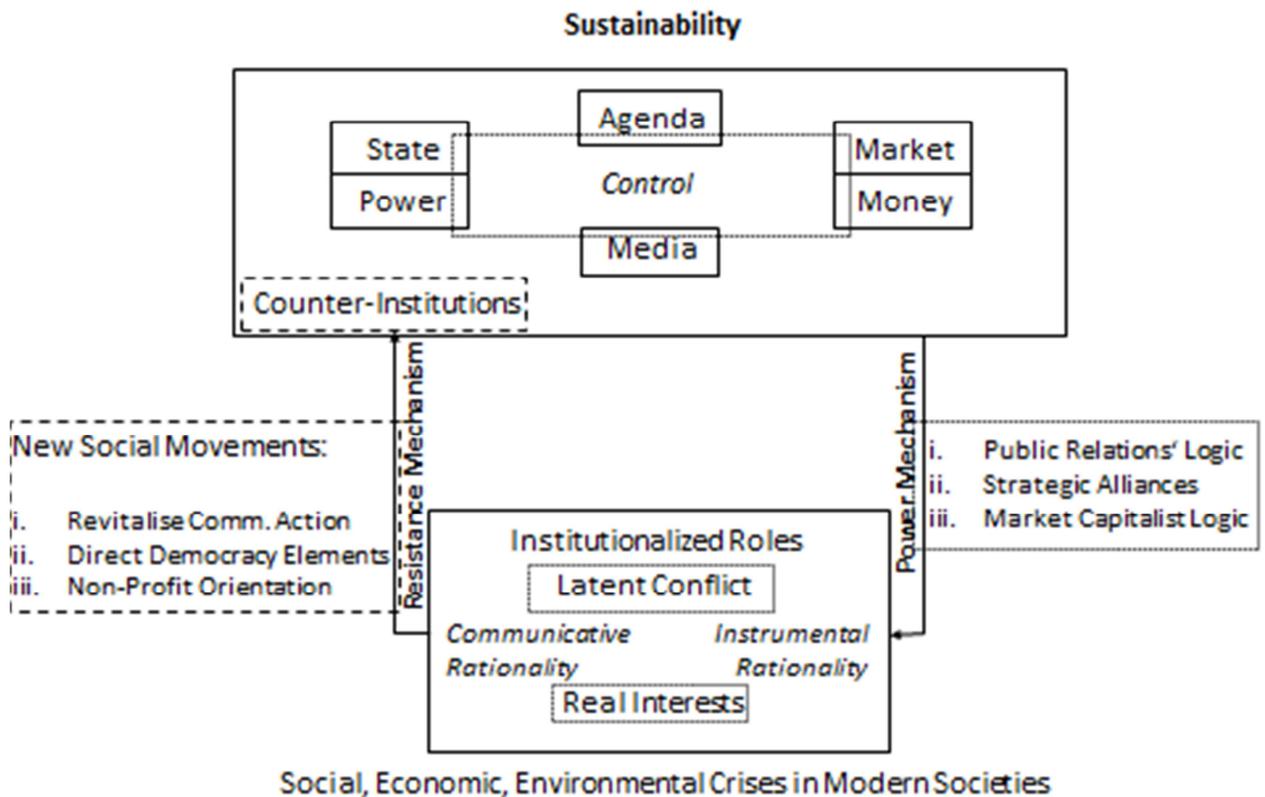


Figure 8: Model illustrating the main conceptual model that merges Lukes' diagnostic and Habermas' prescriptive analysis and the respective results.

6.1. Power Mechanisms that Defend the 'Status Quo'

This section is going to analyse which themes or issues are positioned on the margins of the political *Energiewende* agenda or do not even manage to get onto it. This goes hand in hand with analysing why other issues, on the contrary, receive attention and maintain a dominant position. As explained in the theory chapter, a situation where certain themes or issues are kept out of the political debate is the result of *agenda control* (Lukes, 2005). It represents the overarching mechanism of the aspects put forward in this analysis that can prevent

potential issues rooted in alternative values and interests from being raised, while ensuring at the same time that other issues remain in the foreground.

The following *mechanisms of power* were identified as relevant in the course of the data-analysis (see Figure 9):

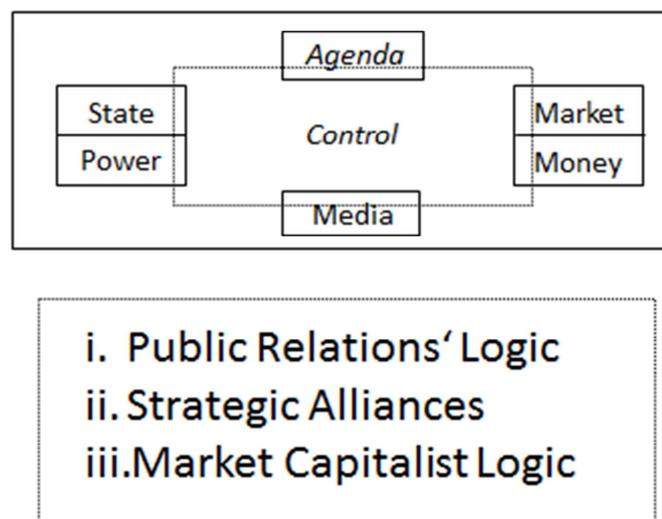


Figure 9: Display of power mechanisms and their functioning. (Detail extracted from Figure 8.)

- i. *Public Relations' Logic:* The distortion of facts regarding the *Energiewende* that enable the strongest – not the better – argument to win. This mechanism is based on the industries' influence on the media coverage that is hardly traceable for average media spectators.
- ii. *Strategic Alliances:* The veiling of political priorities. This mechanism is based on strategic connections between industries ('the market') and political decision-makers ('the state'). Again, this factor is difficult to observe as a non-expert.
- iii. *Market Capitalist Logic:* The hegemony of the market capitalist logic that shapes perceptions and preferences including general perspectives on sustainability. This

mechanism is highly complex and reveals itself in all sorts of organisational structures and every-day decisions made by people.

The three identified mechanisms will be elaborated upon sequentially along the next subsections.

6.1.1. Public Relations' Logic: 'Is the Energiewende Worth its Price?'

The current media coverage on the Energiewende is dominated by the problematization of increasing and unbearable electricity costs in Germany, both for private households, small businesses and big energy intensive industries. One term that has coined the discussion is "Strompreis-Bremse" (in English: "electricity price-brake"), which represents Environmental Minister Altmayer's recent attempt to enforce a reduced electricity tax – not least in order to placate potential electors concerned about increasing electricity prices (Zschaler, 2013). Against this background, it is important to analyse and reveal why the Energiewende agenda and debate emphasises electricity (prices) in the first place.

To begin with, it was interesting to observe that the majority of citizens who took part in the pedestrian interviews in Berlin almost exclusively problematized their worry about ever-increasing electricity prices due to the Energiewende. Thus, although the interviews cannot be considered representative as such, they still indicated that the way the Energiewende is currently framed and discussed in the media is also influencing people's overall perception of the Energiewende project.

In consideration of this, Parliamentary Member and Climate Spokesman of the Green Party's Parliamentary Group Hermann Ott argued that the strong presence of the electricity cost debate in the media and the public opinion actually was paradoxical and the facts distorted. The most central reasons he stated to illustrate this distortion were, firstly, that electricity costs actually represented the smallest share of the total energy costs of private households, and, secondly, that the EGG is representing the smallest share in electricity costs in general (Ott, April 4, 2013). He concluded from these observations "[t]hat the Energiewende has been established as being expensive in the eyes of citizens represents basically a victory for those actors that are against the energy revolution" (Ibid.). Fortunately, he added, "we, [the Green Party], managed to clarify in the media that this is significantly due to the exemptions granted to big industries [...] Now we have to strive to achieve that the cost of not having an

Energiewende, which are much higher of course, will take on more prominence in the future discussion" (Ibid.).

Against this background, the following paragraphs will briefly illustrate why and how relevant actors – mainly the energy supply industries and the energy intensive industries – have managed to set the agenda and debate for the Energiewende with a focus on electricity (prices).

Both energy supply industries and energy intensive industries have reason to present the Energiewende as being too expensive. As the interviewees working in leading positions in the aluminium smelter and chemical industries have argued and explained, electricity prices indeed represent a decisive cost factor to their businesses due to highly energy intensive production processes that cannot easily be displaced (C., March 8, 2013; A., March 4, 2013). Meanwhile, an interview with an employee working at one of Germany's leading energy supplying companies revealed that the new dynamics brought about through the Energiewende are challenging the industry's established business model and market share (D., March 6, 2013).

In order to defend or maintain their position in the market, this study found that the respective industries are trying to influence the way media is reporting about the Energiewende.

The most illustrative case that could serve as an example for the industries' attempt to influence the media coverage are the publications and writings generated by the market liberal lobby-organisation *Initiative New Social Market Economy* (INSM), which is financed by *Gesamtmittel*, the top-level organisation of metal employers. An interviewee, employed at the INSM, summarized its major position regarding the Energiewende, stating that "[t]he current problem with the Energiewende is that the costs get out of hand: this is a threat to our industry, to workplaces and to poor households" (Feist, March 1, 2013). In this respect, it is comprehensible that an argument that refers to dying industries and eliminated job sources 'sells well' in the media and leaves an impression on citizens (compare Chong and Druckman, 2007). An aspect that is however not communicated in the media, is for instance that the Energiewende does not only present a threat to industries, but also a new investment area that generates revenues for them. To give an example, as reported by A., a study by his company had estimated that the Energiewende would require one million tonnes of aluminium until 2020, to which his company wants to contribute (March 4, 2013).

This section helped to show how public opinion regarding the Energiewende is to a noteworthy extent shaped through media-coverage, which is in turn one-sidedly influenced by specific industry interests.

6.1.2. Strategic Alliances: Powerful Connections that Influence the Energiewende

As the interviews revealed, there exists a relatively strong strategic connection between relevant industries and political decision-makers. As reported by Ott, there are "...strong forces within the government that tend to refuse the Energiewende, especially within the economic resorts of the CDU/CSU and FDP in the Ministry of the Economy" (April 8, 2013). Generally he observed that "the government is lacking will and soul for the Energiewende" because of the strong representation of the conventional energy industry in the government coalition (Ibid.). In support of this statement, G. from the BMU described the effectiveness of these industries' lobbying efforts: "...they get an appointment with the relevant minister, they know how to argue and to place their arguments effectively...simply the fact that politicians are always exposed to these lobbies' arguments, leads to them to remember particularly these arguments – no matter how right or wrong they are" (March 7, 2013).

This research revealed that the industries are influencing Energiewende-policies with the help of different strategies. While the energy supplying industry is currently defending its business model "with claws and teeth...with methods that are sometimes relatively unpleasant" (Ott, April 8, 2013), the energy intensive industries is pursuing a more proactive lobbying strategy.

With respect to the energy supply industries' strategies, various documents/ papers report how these businesses have influenced policy in the past; either by placing employees in the relevant ministries that are at the same time working for them, or by offering politicians lucrative jobs after their political career (Fahr, 2008; Bündnis 90 Die Grünen, 2008). At present, a further and major strategy of the leading suppliers is to prevent communities or private citizens' cooperatives to buy back their local electricity grids, by the time the concession contracts run out in 2014. As investigated in a study by Berlo and Wagner (2013), some of the methods employed by the big energy supply industries include demanding a discouragingly high grid price or to offer attractive sponsorship services if the respective communities refrained from buying the grid.

While the closeness between the energy supplying industry and the government is not new, one can observe a newly occurring closeness between the government and the energy intensive industry in Germany that is taking place in the context of the *Energiewende* (Fahr, February 26, 2013). For instance, on February 4, 2013, Environment Minister Altmaier visited the aluminium smelter of Trimet AG (a global player in its business realm) in Essen, where he was shown the functioning of a new technological process called “virtual battery” through which the aluminium industry will be able to stabilise Germany’s electricity grid in future (Jakubczyk, 2013). Visits like this one indicate how the government is mainly seeking solutions to challenges created through the *Energiewende* in partnership with the big industries. The industries’ arguments, in turn, are often presented in a ‘persuasive’ way. As stated for example by the chemical industry association in its position paper on the *Energiewende*: “With its innovative power the chemical industry is contributing to the *Energiewende*. Without this contribution no wind mill is turning, no solar plant is functioning, no electric car is driving” (VCI, 2013). Similarly, the aluminium industry is aware that it can offer the relevant materials for building renewable energy plants and the transmission grid that the government intends to expand (A., March 4, 2013).

The foregoing examples have shown that strategic alliances indeed exist between industries and the government and that these are driven by the different threats or opportunities the *Energiewende* is presenting to them.

6.1.3. Market Capitalist Logic: Barriers for Energy Efficiency and Sufficiency

The following paragraphs serve to highlight that due to different reasons energy efficiency and sufficiency are issues that remain on the margins of the *Energiewende* agenda and debate or do not even get onto it. As some of the presented interviewees’ comments will show the major factor responsible for this is that the principles of energy efficiency and sufficiency collide with the current growth/ecological modernization paradigm that is rooted in the market capitalist logic.

6.1.3.1. 'When Efficiency is for once Economically Unattractive'

Although both technological areas – renewables and energy efficiency – seem to be equally relevant for the Energiewende, only renewables currently receive major investments and experience a rapid development. This is surprising, considering that in other areas efficiency is an actually commonly applied economic principle and therewith “a jackpot for the ecological modernisation of Germany”, both in economic, environmental and in energy security terms (P. Hennicke cited by Dehmer, March 22, 2013). The interviews with employees from the Environmental Ministry (E., February 26, 2013; G., March 7, 2013), the Federal Environmental Agency (F., February, 25, 2013), and the executive chairman of the German Business Initiative for Energy Efficiency (DENEFF) (Noll., March 4, 2013) revealed the following factors as being responsible for this:

To begin with, energy efficiency appears to be a less attractive investment area compared to renewables, which bears both economic and perceptual reasons. For instance, some of the interviewees pointed out as one reason that “energy efficiency is not taking place on a green field” as compared to renewable energy development (Noll; E.). According to Noll, energy efficiency was more abstract and complex and its advantages were by tendency paying off rather in the long-term as compared to the renewables technology. Moreover, E. pointed out that some energy efficiency potentials in the building sector, whose realization would be desirable from a climate point of view, were unwanted by the respective property owners because the untapped potentials often represented a costly new investment that would replace a still working device. In connection with that Noll emphasised, energy efficiency consultations that could be offered to property owners (and customers in general) by electricity providers were under the current state-of-the-art still considered unattractive by the businesses because they principally entail reduced electricity consumption and therewith reduced revenues for them. In addition, F. raised the point that energy efficiency is more difficult to communicate via the media than renewables, which correspond more successfully with the growth paradigm inherent to German business sectors than energy savings through efficiency measures. Because of that, F. assumed, such measures were also less attractive to politicians.

An aspect connected with this point, is according to F., that energy efficiency and energy sufficiency seem to be often confused. This was unfortunately at the costs of communicating energy efficiency, she explained, especially when representing a purely technical measure that the customer did not ‘feel’ since the respective energy service remained the same, only

with less energy input. Thus, added E., although energy efficiency fits perfectly into the ecological modernization paradigm, energy saving is still associated with it. Saving energy, in turn, is still associated with abstinence, which is widely seen as unattractive (Ibid.).

6.1.3.2 'Why Change, if Technologies Can Fix it?'

Having highlighted the major aspects that prevent energy efficiency from taking off, it is also necessary to address why the absolute reduction of energy consumption represents an even less popular issue that does not gain access to the *Energiewende* agenda.

As mentioned in the interviews with governmental officials saving energy and reducing overall consumption, particularly if this entails concepts of sufficiency and changes in lifestyles, represent issues that politicians believe the society and its discourse are not yet ready for. As Ott criticized, current political efforts are concentrating on reducing the output of CO₂ emissions, while ideas on how to emit less CO₂ in the first place are hardly discussed (April 8, 2013). Such ideas, he suggested, needed to be based on a "philosophy of sufficiency" and had to encompass all relevant sectors (Ibid.). Similarly, post-growth economist, Paech, bemoaned the fact that the technology of renewables in Germany had become a panacea for people to believe that the entirety of energy demands of the society can be met (March 6, 2013). At the same time, however, he stated, "what is currently celebrated as *Energiewende* in Germany covers only a marginal share of total energy consumption, while there is continuous growth in the demand for energy in other consumption sectors" (March 6, 2013). He observed critically that there was currently not a single serious objection in parliament that challenged that the *Energiewende* is subordinated to a specific sustainability paradigm (Ibid.).

Concluding, G. observed in view of the current agenda and debate that although a stronger emphasis on sufficiency was desirable, it played no role in the political strategy or public discussion; probably also because "one cannot win elections with sufficiency themes" (E.). Therefore, sufficiency, understood as changing lifestyles has theoretically speaking potential, but is difficult to be addressed politically, because it is very complex, added F.

6.1.4. Interim Conclusion

The preceding analysis indicated the presence of three major power mechanisms that shape the Energiewende agenda and its debate. On the one hand, these mechanisms ensure that particular issues remain dominant on the agenda and that its framing by a weak sustainability/ ecological modernization perspective is maintained. On the other hand, they prevent alternative, *potential issues* such as energy efficiency and sufficiency from gaining ground. However, indicating the presence of such mechanisms is not sufficient, according to Lukes (2005), to establish that a *latent conflict* and not a widely-shared consensus is underlying the Energiewende agenda. Therefore, Section 6.2. serves to address Lukes' second requirement by showing how the different issues (dominant and marginalized ones) are rooted in opposed interests and values hold by "Agenda-Establishers" and "Agenda-Challengers", respectively.

6.2. Deeper Conflicts That Underlie the Energiewende

In order to address the second requirement ii), *the presence of conflicting interests and values*, this section will specifically deal with the interviews' Hypotheses I and II. In brief, the following results are going to be illustrated (see Figure 10):

- i. *Conflicting Interests and Values between A and B*: In line with Hypothesis I, the analysis of the interviews revealed that interviewees from group A (government officials and industry employees) indeed tended to support the status quo, whereas interviewees from group B were inclined to be critical towards the established Energiewende agenda. The interests and values held by interviewees from group A mostly reflected the weak sustainability/ecological modernisation paradigm that has been identified as the sustainability perspective informing the Energiewende agenda. Meanwhile, the interests and values held by interviewees from group B commonly reflected alternative perspectives on sustainability (e.g. strong sustainability/ post-growth, human development approach). These findings were derived from the interviewees' use of language, logic of prioritizing different aspects of sustainability

- (e.g. economic growth, environment protection, participation), and interests regarding the Energiewende project.
- ii. *Conflicting Interests and Values 'within' A*: As foreseen by Hypothesis II, not every individual from group A 'behaved' according to the pattern of Hypothesis I. Accordingly, some interviewees revealed values that were at odds with their organisations' market/policy orientation and rather communicated perspectives on sustainability resembling those offered by interview group B. For instance, the respective interviewees described personal hopes and visions for the Energiewende, containing elements of reducing energy consumption and pursuing less unsustainable lifestyles that they could hardly live up to or realize in the institutional structures that surrounded them. These findings show that a *latent conflict* must not only exist between the interest of A and B, but even 'within' the group of "Agenda-establishers".

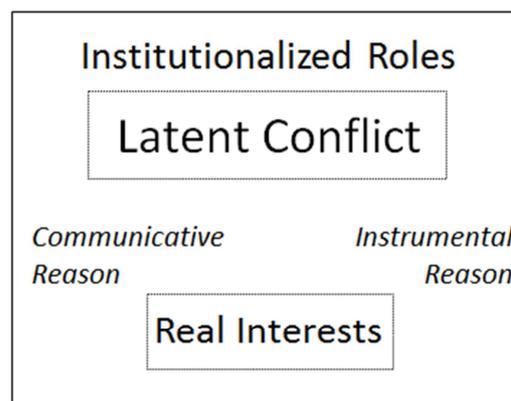


Figure 10: Display of two folded real interests underlying the latent conflict. (Detail extracted from Figure 8.)

6.2.1. Interests and Values of 'Agenda-Establishers': The Perspective from 'Within'

The next sections will communicate the findings regarding Hypothesis I and II in an ethnographic reporting style in order to convey the interviewees' attitudes and viewpoints on the Energiewende as authentically as possible.

6.2.1.1. Industries Attitudes towards the Energiewende: 'Caught in the Iron Cage?'

The interviewees representing the industries usually emphasised the logic of economic growth and revenue-seeking that guides their companies' action. They tended to stress the Energiewende, on the one hand, as a new investment area to which they could contribute, but, on the other hand, as a threat to their position in the international market and to their traditional business model. As the interviewees' described, their business model received pressure, not only from newly emerging actors that are taking over a considerable share of the electricity supply market such as the renewables industries, but also from local and regional actors, social and political movements, and scattered public/private investors working on smaller, decentralised scales.

Although several persons representing the 'big players' in the realm of the Energiewende have been interviewed (e.g. aluminium smelter representative A., energy supply industry representative D., grid operating industry representative B.); for the purpose of illustrating the findings i) and ii) it is sufficient at this place to present only the most illuminating interview in more detail, which is interviewee C. representing a German chemical company. This particular interview illustrates well how the interviewee is aware; on the one hand, how the market capitalist logic described earlier is inducing his company and him as an employee to act in a particular, short-term oriented way. On the other hand, as an individual/ private person, the interviewee envisions at the same time a more sustainable pathway for the Energiewende and the society in general (resembling partially the strong sustainability paradigm and partially the human development approach) and is trying to live up to these wishes and ideals as best as he can.

In the first part of the interview, C. stated "*[t]he Energiewende is both an opportunity and a risk*" to his business sector (March 8, 2013). The major risk was, he continued, that his company's production depended on a highly energy-intensive production process. He explained "*[w]e are stuck in an ambivalent situation in Germany*": On the one hand, the company pursues ambitious climate protection objectives and puts all efforts into the development of relevant technologies – as for example, to make the production process less energy demanding – which represents a huge contribution to the climate-friendliness of the sector in general. On the other hand, argued C., as a globally operating business the company stands in immediate competition with other players that operate with lower electricity costs. Because of this challenging situation, "*German industries are going to shoulder a heavy burden to make the country renewable. This is why we are dependent on*

reduced electricity prices, but also on clear political guidelines for our business plans and investments”, stated C.

The way C. described the situation of big industries in the course of the Energiewende, but also the general structure of his argumentation, resembled the pattern of interviews conducted with representatives of other industrial sectors: On the one hand, it is claimed that the respective industry’s contribution to the Energiewende is a major one to the project’s success. On the other hand, it is put forward at the same time that this contribution could only develop to its fullest potential, if conditions of competition were benign, followed by an urgent demand to the Government to make sure that these conditions are being established.

In the second part of the interview, C. stressed that the inherent tension of the present financial and economic system left people almost no choice but to seek the maximisation of their profits. Taking his industry’s perspective, he elaborated further, that his *“company could achieve much more in terms of sustainability, but as a shareholder-lead business it simply could not act ‘philanthropically’”*. Therefore, he argued, for an economic business, continuous growth was essential and alternatives such as reduced consumption or a post-growth economy were unfortunately unacceptable. Nevertheless, C. also stated that as a private person and family father he had invested in an energy efficient house and car and that he was trying to make his children more sensitive to sustainable consumption. Furthermore, he demanded, considering the fact that people hardly liked changing their habits *“we need groups of people who think differently and that can set a positive example of how one can act and live more sustainably”*. With respect to the chemical industry sector, he mentioned further that the positions that are usually published by industrial associations represented ‘merely’ consensus papers. In other words, internally, people working in his sector were relatively open to step onto a more sustainable pathway regarding the Energiewende.

6.2.1.2. Policy-Makers’ Attitudes towards the Energiewende: ‘It’s complicated!’

In correspondence concerning interviewees’ attitudes from the industry sector portrayed above, interviewees employed at the governmental authorities tended to describe the obstacles provided by different market participants that make a stronger political emphasis on the energy efficiency and sufficiency principles (too) difficult. Generally, their comments

reflected the Governments sustainability priorities regarding the Energiewende project, and therewith also a tendency to seek solutions for implementing the Energiewende in partnership with the big industries.

Nevertheless, apart from pointing at the political difficulties in coordinating the Energiewende, the government officials also expressed their personal hopes for the Energiewende project:

Although the interviewees stated that changes in consumption patterns and more sustainable lifestyles in general could not be steered or induced by the government in the first place, they voiced strong optimism with regard to individual citizens' efforts: *"We need pioneers who can set positive examples and who explore more sustainable pathways. This is a learning process that also contains set-backs. It takes time until the advantages from these changes become less abstract and less terrifying. But these changes might become accepted as normal one day – without them having being officially decided"* (E., February 26, 2013). Furthermore, the future visions regarding the Energiewende that the interviewees described contained elements such as sustainable consumption, a model of prosperity based on less working hours, leisure time pleasure based on activities low in CO₂, as well as more communal life and community-use of goods. These elements and ideas resemble strongly the post-growth and human development approach to sustainability. As G. concluded revealingly *"energy policy has to follow a socio-political consensus, but it will not be able to replace it"* (March 7, 2013). With this he implied that a paradigmatic shift could not be induced through policy measures, but had to be initiated from the 'bottom'.

In conclusion, the interviews with *"Agenda-Establishers"* portrayed above showed that there are strong interests put forward by big industries that the government has to and also wants to address; after all the industries' contributions and interests regarding the Energiewende are valuable and valid in their own way. In addition, it has been shown that there is a conflict of interests and values 'within' the group of A, which indicates the workings of deeper power mechanisms.

In subsequent section the diagnostic part of the analysis will gradually give way to the prescriptive part. On the one hand, it will be shown that there are interests and values hold by interviewees of group B that explicitly challenge the agenda. On the other hand, employing Habermas' concepts of NSMs it will be demonstrated how the *latent conflict* can be addressed and 'stirred up' so that a wider and reflexive agenda can emerge to inform the Energiewende in a more balanced way.

6.2.2. Interests and Values of 'Agenda-Challengers': The Perspective from 'Without'

For the purpose of communicating the results of this part of the analysis only the most relevant actors that challenge the agenda will be presented here. These actors – a value-based social movement (VSM) embodied by Transition Town Initiatives (TTIs) and a political social movement (PSM) called BürgerEnergie-Bewegung (in English: CitizensEnergy-Movement), both located in Berlin – were found relevant because of two major reasons: Firstly, both movements hold values and perspectives on sustainability that are opposed to the weak sustainability/ecological modernisation paradigm informing the Energiewende agenda. Secondly, they are based on specific *social mechanisms* carrying different potentials (see Figure 11):

i) *Revitalising Communicative Action*: The NSMs in Berlin are capable to trigger people's *communicative rationality* (CR) by offering space for *communicative action* (CA) to take place.

ii) *Direct Democratic Elements* and iii) *Non-Profit Orientation*: The NSMs are based on values that have the potential to foster and test new ideas and institutional arrangements that counter the conventional system of profit-maximising economic institutions and mass parties.

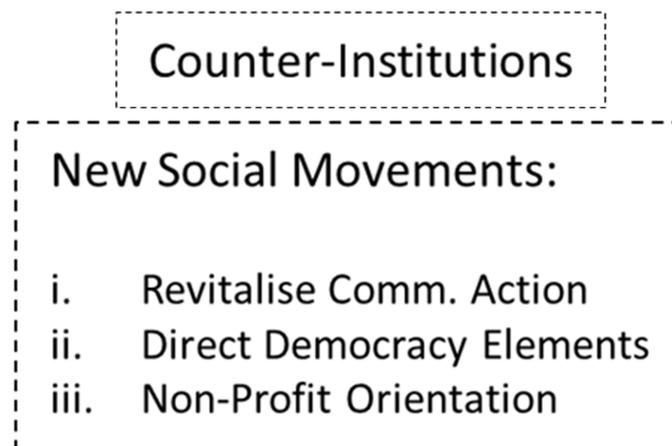


Figure 11: Display of mechanisms of resistance carried by NSMs. (Detail extracted from Figure 8.)

Therewith, the three social mechanisms represent important counter-powers that can resist the *power mechanisms* identified earlier and that can address the *latent conflict* by triggering the CR component of peoples' real interests. With special regard to the Energiewende agenda and debate, it is put forward in this analysis part that the NSMs with the support of their specific mechanisms can help to push the *potential issues* of energy efficiency and sufficiency stronger onto the agenda so that they can be discussed more seriously eventually.

6.2.2.1. Transition Town Initiatives' and the Energiewende: 'Less Is More'

The central idea of Transition Towns (TTs), whose initial movement originates from the U.K., is to address climate change and the limitedness of fossil resources in a combined strategy that is based on the concept of *resilience*¹ (Hopkins, 2008). As a result, the key issue of the TT strategy is to reduce the entire energy consumption of modern society, not merely electricity consumption.

Meanwhile, the Transition Town Movement (TTM) in Berlin can be considered to bear a promising contribution to the Energiewende agenda, mainly because of three factors: Firstly, the TTIs offer space for everyone interested to discuss and test new ideas and forms of conducting ones' own life more sustainably. Secondly, the TTI participants generally show a high degree of enthusiasm and readiness to change their habits and ways of consumption towards more sustainably ones. This proactive characteristic frequently differentiates them from other people. Thirdly, the TTIs in Berlin pursue activities and projects that focus on their immediate neighbourhoods in order to be in close contact and exchange with the people living there. Notably, these three factors are based on a more encompassing understanding of the Energiewende and thereby pose an implicit critique towards the current Energiewende agenda and the underlying power mechanisms.

¹ Resilience originates from ecology and implies the capability of resistance, adaptability and elasticity of a system and its functions to react on external disruptions (Hopkins, 2008)

The following paragraphs will briefly present the TTI-interviewees' basic critique of the Energiewende and the 'system' as well as some of their comments that illustrate the three factors highlighted above. (While the interviewees Rahel, Thomas, and Julian belong to the founders of the TTIs in Berlin, Amelie is representing a recent follower).

As stated by Rahel, the TTIs' major critique of the Governmental Energiewende agenda is *"that it is not sufficiently holistic and that it does not explicitly assume that our society has to consume less energy"* (February 18, 2013). Hence, the term Energie- "wende" (turnaround) was an overstatement in itself, said Rahel. At present, it rather represented a 'technological turnaround' towards renewables, but not yet a change in the tendency of an increasing energy demand, she observed critically (Ibid.). With respect to the general 'system', Thomas criticised that in his opinion economic interests and industries were dominating current policies (March 7, 2013): *"Capitalism is responsible for our problems; this is why I personally do not expect any serious attempts from capital-controlled policy to come up with far-reaching solutions – no matter which party is in power"*.

Against the background of this general critique, the aspects which the interviewees found most attractive and promising regarding the TTM were its grassroots approach, the available space for new ideas, and the commonly shared goal to discover ways of how every-day life can be conducted more sustainably. The personal reward and motivation for joining the movement was to become *"less heteronomous"* and *"to take on responsibility for one's CO₂ and 'social' footprint that is normally delegated to distantly located parliamentary members who may often be manipulated by money and power"* (Amelie, March 7, 2013). In the interview Amelie mentioned compellingly *"[w]e are not only responsible for what we do, but also for what we fail to do. The awareness and knowledge about the unsustainability of our living standard is so advanced today that we can no longer claim we simply did not know"* (Ibid.). Similarly, Julian observed that *"people sometimes do not seem to be aware that they can change something themselves and to make a difference"* (February 26, 2013).

Describing the TTIs overarching goals in Berlin, Rahel pointed out that all in all *"[w]e aim at developing realistic ways for conducting a more sustainable everyday life"* (February 18, 2013). She also stressed that she and her group were first of all trying to make people feel enthusiastic and positive about joining their projects ranging from planting fruit trees to setting up an organic neighbourhood shop. *"The last thing we want is moralising people and telling them what they should do"* by lecturing them about climate change and diminishing fossil fuel resources (Ibid).

Beyond the factors represented above, the interviews with TTI participants and also the conducted participant observation left the impression that a particularly unique feature of the TTIs in Berlin is that they are entirely value-based and not politically oriented. As the field visit revealed, the TTI members pursue activities that are focused on their direct environment and neighbours as well as on their own personal lifestyle. Although they addressed the issue of reducing electricity consumption within their projects, they intended no wider political consequences and also voiced no explicit demands regarding the Energiewende agenda. As has been argued by Villumsen (2012), VSMs – as in this case the TTIs – are generally based on value-principles “without conscious strategies towards sustainability” which is also “why outcomes can become unintended” but yet still contribute to great structural transformations in social, political and economic institutions (p. 21).

In the following, a second movement will be portrayed: It can be equally considered to offer relevant contributions to the Energiewende agenda, while being explicitly politically oriented.

6.2.2.2. *The EnergyCitizens and the Energiewende: ‘Small Is Beautiful’*

This section outlines the interests and values represented by the *BürgerEnergie-Bewegung* in Germany by focusing particularly on two major citizen initiatives in Berlin – *BürgerEnergie Berlin* and *Berliner Energietisch*. The interests/ values of this politically oriented social movement (PSM) represent a further relevant contribution to the current Energiewende agenda, because, firstly, they present citizens as central enablers of the Energiewende, and, secondly, they seek alternative institutional arrangements and structures for the ownership and organisation of electricity supply. Although not explicitly stated by the citizen initiatives, whose emphasis is more on the democratic aspect of the *BürgerEnergie-Bewegung*, these new institutional arrangements carry the potential to strengthen and integrate the principles of energy efficiency and sufficiency in the future.

The succeeding paragraphs will briefly sketch the movement’s critique of the present electricity system, its main purposes and goals, as well as suggestions for alternative institutional arrangements that have been put forward by the citizen initiatives.

The major critique that has motivated the *BürgerEnergie-Bewegung* is the common perception that the current Energiewende agenda and discussion is dominated by the

conventional energy supplying industries (Zuber, March 28, 2013). As F. Zuber, project leader of the *BürgerEnergiewende*-campaign in Berlin criticised, this was not fair considering the fact that German citizens have contributed immensely to the Energiewende in the past and today hold more than a 50% share in the investments in renewables (Ibid.). These aspects were currently neither reflected appropriately in the Energiewende agenda nor in its political debate (Ibid.). Furthermore, the *BürgerEnergie-Bewegung* carries a general critique of the incumbent electricity system that according to the movement's supporters is overly centralized and too detached from actual citizens who consume its electricity (Ibid.).

In consideration of these points of critique, the movement is pursuing two major goals:

Firstly, it seeks to appropriately represent and connect the scattered *EnergieBürger* by providing them with a common voice in the media and the political debate (BürgerEnergie Berlin, 2013). The term *EnergieBürger* has been created in order to represent the entirety of citizens directly or indirectly engaged in the Energiewende (e.g. citizens operating renewable energy plants, customers who purchase green electricity and implement energy efficiency measures) (Zuber, March 28, 2013). Through this effort the movements' campaigners hope to stir a socio-political debate on the Energiewende that strengthens the role of citizens in the Energiewende agenda, and that helps to shift the common perception of electricity as a consumer good to a cultural good (Ibid.). Ideally, the movement's campaigners hope, this will also influence the debate during the upcoming governmental elections in autumn 2013 (Ibid.). Friends of the Earth Germany (BUND)-Chair Hubert Weigner, whose organisation is supporting the *EnergieBürger-Bewegung*, summarized accordingly "*We will show that the EnergieBürger-Bewegung is eligible for elections. The political parties will realize that many thousands of committed citizen want the Energiewende and that they will not accept that it is politically hampered*".

Secondly, the movement intends to change the current ownership structure of Berlin's electricity grid. The goal is to bring the ownership and responsibility over electricity supply 'back' into the hands of citizens, since this is considered most democratic, transparent, and fair and is also expected to create the highest citizen-acceptance and dynamics (Berliner Energietisch, 2012; BürgerEnergie Berlin, 2013). Although the social- and democratic-goal oriented value of this endeavour is currently put into the foreground, the movement's vision also explicitly contains a climate protection objective as well as a reduction of electricity consumption objective (TAZ.de, 2013). In order to pave the way for this vision the two citizen initiatives are currently gathering financial donations that are required to buy back the local grid from the current main electricity provider Vattenfall, whose concession

contract is running out in year 2014 (BürgerEnergie Berlin, 2013). In addition, the initiatives are collecting citizens' signatures in order to make their demands eligible for a popular petition (Berliner Energietisch, 2012). This process serves mainly two purposes; firstly, to foster the formation of a public will/opinion regarding the citizen initiatives' demands to change the ownership model of the local grid, and, secondly, to increase the political pressure to act on the Berlin's senate (Ibid.).

By the time the buyback succeeds, the citizen initiatives suggest the implementation of either one of the following alternative institutional arrangements, or a combination of them:

While the *Berliner Energietisch* basically foresees a *re-municipalisation* of the electricity supply, *BürgerEnergie Berlin* favours the model of small energy cooperatives (Berliner Energietisch, 2012; BürgerEnergie Berlin, 2013). Although these models represent different ideas of ownership – the former wants to see the electricity grid owned by the municipality again, while the latter considers the ownership of small private investors as superior – both of them claim to be fairer, more democratic, and more transparent than the current ownership by a foreign (Swedish) company.

What is making these models appealing in the context of the Energiewende – especially in contrast to conventional business models that are relatively detached from their customers – is that they both offer the opportunity to incorporate the principles of energy efficiency and sufficiency into their institutional arrangements. While energy efficiency could be integrated relatively easily into the alternative models, for instance, by offering electricity saving-consultations to customers, implementing the principle of sufficiency will be more challenging. Following Thomas Princen's argumentation in his book "The logic of sufficiency" (2007), public institutions based on the principle of sufficiency are urgently needed, if today's society wants to address the challenge of climate change and related environmental issues in a truly sustainable way. Addressing how exactly the principle of sufficiency will be able to gain ground in new institutional arrangements as proposed in Berlin, would go beyond the scope of this thesis. However, it can be argued at this place that the presence of TTIs in Berlin that are trying to discover less energy-intensive pathways for every-day life might have a positive spill-over effect on the incorporation of a non-profit element – i.e. an incentive for consuming less electricity – into the new institutions.

All in all, the portraiture of the two NSMs outlined how they – through the *mechanisms of resistance* – provide the space and conditions for domination-free dialogue and discussion – CA – thereby triggering CR. Further, through their emphasis on social and political values such as sufficiency and grassroots democracy, and new forms of ownership of electricity

they inspire the development of alternative political, social, and economic institutional arrangements. Finally, these efforts have the potential to lead to the broadening of the Energiewende agenda and debate: With its strong political motivation the EnergieBürger-Bewegung can foster citizens' public will formation and reinstate active citizenship on the matter of electricity consumption and ownership. Meanwhile, the TTIs can – although there are modestly trying to initiate change 'only' in their direct neighbourhood – stimulate a wider 'informal', social change that is driven by the dynamics of positive and tangible examples.

6.2.3. Conclusion

The second part of the analysis illustrated that there is a deeper, latent conflict underlying the Energiewende agenda, and that the agenda as it is founded on a weak sustainability/ecological modernisation paradigm is in fact not based on a widely-shared consensus. This deeper conflict has been highlighted by demonstrating that there are conflicting interests and values put forward by "*Agenda-Establishers*", on the one hand, whose themes are dominating the Energiewende agenda and debate, and "*Agenda-Challengers*", on the other hand, whose issues although they are valuable have not yet been represented appropriately. It has also been revealed that those business or political representatives who basically support the agenda – mainly because they represent a particular organisation in the system – in their role as private persons many times uttered perspectives on sustainability that resembled those expressed by "*Agenda-Challengers*".

The portraiture of the two different social movements served to show how NSMs as they strengthen specific *mechanisms of resistance* pose a counter-weight to the *power mechanisms* that keep the conflict of interests and values latent. Thereby, NSMs carry the important potential of being able to contribute to more far-reaching sustainability transformations.

7. Final Remarks: Addressing the Science-Society Gap

In order to tie in with the problem description and research goals posed at the beginning of the thesis, the wider implications of its findings for sustainability transformations such as the Energiewende and sustainability science as a research programme are being highlighted in the following.

7.1. Adding Recent Social Science Theories to the Sustainability Science-Toolbox

All in all, Lukes' and Habermas' theoretical concepts have helped to show at the example of the German Energiewende how different *mechanisms of power or resistance* can reinforce, on the one hand, and tackle, on the other hand, the 'science-society-gap' problematized by Boda and Faran (2013).

Lukes' conceptualization of power has proven to be a useful and illuminating 'tool' for studying soft-power mechanisms in a more subtle and deeper way, especially in the cases of advanced, complex societies. With respect to the Energiewende in Germany, the three-dimensional view of power enabled to show that *mechanisms of power* prevent the Energiewende from tapping its full potential and that its current 'half-hearted' pathway to sustainability is not founded on a widely-shared consensus, but is latently challenged. From a sustainability science perspective, this sophisticated view of power turned out to be particularly relevant, since it illustrates how soft-power mechanisms can hamper scientific knowledge from gaining ground in peoples' attitudes and habits as well as in political decision-making. In addition, it can help to shed light upon the factors that make the paradigms of weak sustainability and ecological modernisation a popular 'choice' for informing political sustainability strategies.

Meanwhile, Habermas' system-lifeworld conceptualization and concept of NSMs have served as useful tools to identify *social mechanisms of resistance* that emerge from the 'bottom' of society/ the *lifeworld* and that can provide a counter-weight to the effects of power mechanisms. It has been outlined, further, that these social movements carry and strengthen various values and ideas that are often marginalized in official political sustainability strategies, but which are nevertheless useful to encourage more far-reaching sustainability transformations.

7.2. A 'Broader Informational Basis' for the Energiewende

Ratner (2004) conceives sustainability to be “constructed not as a fix end, but as a dialogue of values...” (p.62). From this follows the argument that sustainability has to be defined socially and becomes “meaningful not because it provides an encompassing solution to different notions of what is good, but for the way it brings such differences into a common field of dispute, dialogue, and potential agreement as the basis of collective action” (Ibid., p. 62).

Correspondingly, the findings of the thesis lead to the suggestion that the Energiewende agenda, and sustainability strategies in general, need to be more reflective and inclusive in order to provide space for a truly open dialogue and an ‘emerging consensus’ on sustainability. Although the interests and values already presented in the Energiewende agenda are valid and valuable in their own way, consulting only them alone is likely to encourage ‘merely’ a half-hearted switch from conventional energy sources to renewable ones, but not a true energy turnaround marked by less energy consumption. Therefore, the analysis of the German Energiewende agenda also suggests that strategies for sustainability transformations should better be developed from a “broader informational basis” that is open to different values and perspectives on sustainability (Sen, 1999, p. 67).

7.3. Further Research Directions

With regard to possible future research directions, it would be interesting to study (energy) transformations through the lens of social and political theories using other examples in order to gain further insights and perhaps comparative knowledge on the functioning of power/resistance mechanisms in various contexts. Moreover, it would be relevant to conduct further research on the way how public institutions could integrate the logic of sufficiency in future. In this respect, one could also address the question whether VSMs and PSMs could collaborate on this matter, and perhaps more importantly, if this is desirable.

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Appendix – Data Collection

A1: Conducted Interviews

The interviews were conducted to support the assumption of the thesis and to illustrate its models. They were semi-structured, lasted on average between 30 minutes and one hour and were conducted face-to-face, if travel distance and schedule allowed it.

Sampling Methods

The interviewees were selected by purposive sampling, because Lukes' and Stinchcombe's concepts implicitly suggested certain persons or organizations (Bryman, 2008, p. 375). Once a contact was established with some interviewees, snowball sampling was used as a secondary sampling method to create further contacts (Ibid., p. 699). This was particularly helpful to get in touch with interviewees in higher job positions.

Ethical Considerations

Due to ethical reasons most interviewees remained anonymous in the thesis. They are referred to only by their businesses'/organisation's sector and an alphabetical letter. The anonymisation was particularly relevant concerning interviewees working in higher business or government positions, since responses were required both from a personal/ informal and a business/formal point of view, which were often conflicting.

Interview Style and Recording/Transcription

The interview guide was slightly altered in terms of jargon and further specific questions for each interview (Bryman, 2008, p. 438). The semi-structured set-up was preferable for the research because it allowed exploring up-coming themes or in-depth responses, particularly when inquiring about the interviewee's views on sustainability (Ibid.). The interviews were recorded, if permission was granted by the interviewees. The purpose of the interview was

made overt, and consent was obtained. Afterwards, the interviews were transcribed and coded to organize and analyse the responses. This helped to identify emerging themes in the data and to compare theme to the theoretical assumptions underlying the research questions (Bryman, 2008, p. 542; Strauss and Corbin, 1998).

Interview set A: "Agenda-Establishers"

Respondent Identification	Representing	Date	Type/Length
A	Aluminum Smelter	4th Mar 2013	Phone 36 min.
B	Transmission Provider	27th Feb 2013	Face-to-face 45 min.
C	Chemicals Industry	8th Mar 2013	Phone 1h2
D	Energy Supply Company	6th Mar 2013	Phone 41 min.
E	BMU	26th Feb 2013	Face-to-Face 1h7min.
F	UBA	25th Feb 2013	Phone 1h
G	BMU	7th Mar 2013	Face-to-face 31 min.
Ott, Herman	Parliament Member, Green Party	8th April 2013	Phone, 30 min.
Feist, Marc	INSM	1st Mar 2013	Face-to-face 42 min.

Interview set B: "Agenda-Challengers"

Respondent Identification	Representing	Date	Type/Length
J.	Solar business	1st Mar 2013	Phone 45 min.
Noll, Christian	Energy efficiency sector	4th Mar 2013	Face-to-Face 58 min.
Thomas	TTI Berlin	7th Mar 2013	E-Mail
Amelie	TTI Berlin	6th Mar 2013	Phone 10min; E-Mail
Rahel	TTI Berlin	18th Feb 2013	Phone 1h17
Julian	TTI Berlin	26th Feb 2013	Phone 26min
Taschner, Stefan	Energietisch Berlin	25th Feb 2013	Face-to-face, 35 min.
Zuber, Fabian	Haleakala Stiftung	28th Mar 2013	Phone 30 min.
Schmidthals, Malte	Unabhängiges Institut für Umweltfragen	20th Feb 2013	Phone 1h
Paech, Niko	Post-Growth	6th Mar 2013	Phone 37 min.
Conrad Kunze	Regional dynamics	19th Mar 2013	Phone 1h30

Interviews: Pedestrians

In order to get a first-hand impression of citizen's attitudes towards the Energiewende in Berlin 10 interviews were conducted with randomly selected pedestrians in Berlin. This allowed gaining a rough idea of citizens' degree of information regarding the Energiewende and which media messages have left a major impression on them. The rather short interviews – average length 15 min. – were all hold on March 7, 2013.

Interview: Informant

The purpose of the informant-interview was to get further insights into the workings of power mechanisms and (new) strategic alliances between government and industries.

Respondent Identification	Expertise	Date	Type/Length
Fahr, Philipp	Power relations	26th Feb 2013	Phone 1h

A2: Interview Guide

The interviews were all conducted in German. The interview guide changed roughly from interview to interview in order to cover specific themes.

Interview Guide – Part I

1.	What do you associate with the term Energiewende?
2.	Has the German policy on the Energiewende been successful so far? Please name at least two positive and two negative aspects, respectively.
3.	How do you assess the current debate regarding the energy transformation in the political arena and in the media?
4.	Which themes seem to dominate the discussion and the political agenda of the energy transformation?
5.	Why are these themes so strong?
6.	Which themes do you miss in the discussion and on the political agenda, and why?
7.	Why are these themes rather weak in the discussion?
8.	Which actors seem to dominate the debate and the political agenda?
9.	Which actors represent potential issues that are not yet strong on the political agenda or even totally excluded?

Interview Guide – Part II

7.	Is there anything that you generally do in order to protect the environment?
8.	Are you interested in saving electricity or energy in general? Why/ why not? How?
9.	Would you be willing to change some of your consumption habits or daily routines to save more energy in future?
10.	Imagine Germany or your particular neighbourhood in year 2050. How would your ideal vision look like, if the Energiewende had developed successfully?
11.	What kind of impact would the situation you just described have on your daily-life?
12.	What has to change in the short-term to get onto an appropriate pathway to reach your vision?
13.	Could you think of an additional or alternative indicator to measure the prosperity of a nation next to or instead of GDP?
15.	Could you imagine to earn less but to have more leisure time in return?
16.	Would you be willing to pay higher electricity prices for green power sources?

Additional Questions for Industry Representatives:

1.	What is your business' special contribution to the Energiewende?
2.	What is the greatest challenge that is faced by your business because of the Energiewende?

Additional Questions for TTI Representatives:

1.	How has your initiative been founded?
2.	What are your initiative's goals?
3.	When did you join? What made you join?
4.	Is the initiative growing? How? Why/Why not?
5.	Are you getting inspired to do things differently? How?
6.	Did anything change for you since you are part of the initiative?
7.	Does the initiative help you to express your ideas and feelings better, or to realize them? How? How was that more difficult before?
8.	What is limiting you and your initiative to achieve even more?

Additional Questions for CitizenEnergy-Movement Representatives:

1.	What is your main critique of the governmental Energiewende agenda?
2.	What are the overarching goals of the CitizenEnergy-Movement? Who are its supporters?
3.	Does your goal foresee to include energy efficiency and sufficiency? How?
4.	Against which actors and structures is the movement protesting?
5.	How do these actors try to hamper the movement's goal achievement?

Questions for Pedestrian Interviews:

1.	What does the term Energiewende mean to you?
2.	What is your general opinion regarding the Energiewende?
3.	What are critical aspects regarding the Energiewende?
4.	Do you do anything to protect the environment? What motivates you to do this? What hinders you?
5.	Would you be able and/ or willing to pay more for green electricity?
6.	Are you happy with your daily-life? Are there aspects that you would like to change if you could?

A3: Participant Observation

A participant observation was conducted at a network-meeting of TTIs from Berlin on March 3, 2013, which was attended by 25 people. The purpose was to gain a better appreciation of the movement's members' culture, including aspects such as behaviour, clothing, communication, organization of the meeting and activities (Bryman, 2008, p. 369). The researcher took the status as a participant-observer within the meeting (Ibid, p. 410). Hence, the researcher's role did not defer to the ones of the other participants; nevertheless the participants were made aware that the meeting would eventually become relevant for this study (Ibid, p. 410).

A4: Conference Visit

The fieldwork in Berlin also included a visit of the conference „Renewable Energies Regions: Social and ecological self-sufficiency in renewable energies“ that took place on March 5, 2013, in Berlin. The major purpose of the conference was to let community leaders present their local best practice examples for regional energy transformations and to discuss them in the plenum. Besides, scientists presented their research results on how communities in Germany could seek socially acceptable and ecologically sound self-sufficiency provided through renewables.