

Putting a competitive advantage at stake? Energiewende in the discursive practices of German industrial actors

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Abstract. Germany has made significant progress in moving towards a renewable energy future; nevertheless, despite the truly ambitious renewable energy goals, many voices from the industry are heard saying it poses a challenge for Germany's manufacturing basis and competitive edge. While the seriousness of this challenge is intensively debated, industrial actors warn repeatedly that Germany may lose its competitive advantage gradually if transition to the renewables does not become a better coordinated effort in all of its aspects. In connection to this, the article seeks to deliver an industrial view upon this challenging transformation process and to identify risks which energy transition poses for the competitiveness of German industry as perceived by industrial actors. This is done by analyzing the discourse maintained by the Federation of German Industry during the period 2009–2015, applying argumentative discourse analysis. Among different factors, distorted pricing policy is addressed in the Federation's discursive practices as one of the most significant risk factors and is referred to as a central factor making the sustaining of a competitive advantage a more difficult task. Findings also reveal in particular that the preservation of closed value chains in Germany is an essential part of the analyzed discourse, seen as a core element of Germany's manufacturing strength.

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INTRODUCTION

Germany is at present amidst an ambitious transformation of its energy system – the so-called Energiewende (in German “energy transition”), which seeks to construct an energy system around renewable power sources. The ambitiousness of its pioneering effort concerns the defined targets, which substantially outperform the EU 20-20-20 targets as well as the speed of transformation itself. Germany aims to produce about 40-45% of its electricity from renewable sources by 2025 and increase this proportion to 55-60% by 2035 (BMJV 2014, 6). This large-scale transformation process is taking place along with the decision to abandon nuclear power after the Fukushima disaster, with the latter still having a substantial

share in gross electricity generation (15.8% in 2014) according to DAfF (2015) and providing baseload power. This makes the ultimate outcome of the transformation process less predictable and more risky as nuclear power, originally seen as a bridge technology in the decades to come, is knocked out from the energy system. Furthermore, Germany's energy transformation is taking place at a time when the electricity market coupling processes in the EU has yet to be accomplished, thus making the *Energiewende* an even riskier and more challenging endeavor.

Despite these circumstances, with the latest amendments to the Renewable Energy Act (*Erneuerbare Energien Gesetz*, hereinafter the EEG) in 2014 Germany confirmed its adherence to this profound transformation process. Concerns over energy dependence and willingness to reduce negative environmental impacts are two major lines of argument in favor of continuing the transformation process (Von Gierke 2013, 2). They dominate the institutionalized public discourse in Germany, while public support for the *Energiewende* remains very high. Over 90% of German citizens support the idea of increasing the share of electricity generated from renewable power sources in the energy mix, despite considerable concern over the swift pace of the *Energiewende* (PWC 2015, 7 and 11).

Despite positive intentions to protect the environment and increase the country's energy independence, the validity of arguments on how to conduct the *Energiewende* has been questioned and inconsistencies between objectives and actual implementation are a constant source of debate (Hennicke and Welfens 2012; Sinn 2013). Inconsistencies result from an ambitious plan to cut emissions and cast off nuclear power and fossil fuels simultaneously. Seen in more detail, the *Energiewende* has been criticized for many reasons. The main criticism is in particular delayed expansion of electricity grids and the mounting risk of power grid instability (MBWi 2016, Winterhagen 2012, Dena 2012).

One of the key questions in this context remains how to implement the *Energiewende* without compromising German manufacturing base – the strongest in Europe, which has the biggest industrial share in the country's GDP reaching 22.3% among other EU states (Federal Statistical Office 2015, 1). To date, German industry has been backed by strong exports but concerns are being voiced regarding the future course of the *Energiewende* and its implications for the industry (Moec, Böttcher, and Schneider 2013). Industrial actors warn of the negative consequences of the rapid transformation for German competitiveness – see e.g. data of the *Energiewende-Navigator* in 2013 and 2014 (BDI 2015b, BDI 2014c).

Therefore, taking a closer look at the stance of industrial actors towards the *Energiewende* is relevant for discussing the most optimal redesign of the energy system in the years to come. More importantly, a closer examination is relevant for comprehending potentially harmful effects on the manufacturing stronghold, which industrial actors articulate as resulting from the *Energiewende*. Such examination shall be achieved through a detailed analysis of arguments brought forward in the discursive practices of German industrial actors.

Before the discourse is analyzed in detail, the first chapter provides an overview of the phenomenon of competitiveness and how it is conceptualized. The second part explains the methodological setup and approach to data gathering and processing. The third part deals with the structure of the discourse and *Energiewende*-related risks articulated by the industry. The last chapter concludes.

1. CONCEPTUALIZING THE PHENOMENON OF COMPETITIVENESS

It is important to approach the *Energiewende* transformation process from the perspective of the industrial actors who formulate a so-called 'insider' discourse. The Federation of German Industry (*Bundesverband der Deutschen Industrie*, herewith after - BDI), which is an umbrella organization of German industrial players speaking on behalf of 36 sector associations, is best suited for this purpose. To be noted BDI is

a lobby group of German industries. It is by and large not the only lobby group (BMWi 2015), but the one which represents interests of the majority of energy intensive industries in Germany.

That is, the question of how the *Energiewende* is likely to affect the competitiveness of Germany industry will be answered here based upon analysis of BDI discursive practices. With this focus, the article presents an ‘insider’ discourse unlike discourses produced by actors outside the field and characterized by an abstract knowledge (Machin and Van Leeuwen 2007, 61).

As with any complex phenomenon, competitiveness is factor-based, or rather factor-dependent. Therefore, the myriad of ways to define competitiveness varies depending on what kinds of factors are put to the fore. Historically, different factors were believed to have major explanatory power to comprehend competitiveness. These include land, capital, natural resources and labor in the classical economic literature, going back to Adam Smith, which impact economic development. The sociopolitical environment is the key factor according to the Marxist paradigm, while values and religious beliefs are at the center of the Weberian perspective. More recently, focus has shifted to Drucker’s concept of management, proceeded by the input factor – entrepreneurship, scrutinized by Schumpeter (Garelli 2014, 488-503). Configurations of various factors as value-added chains and across geographical locations were later researched by Porter (1990) and modeled in his theory of the competitive advantage of nations.

Still more recent aspects under scrutiny include technological innovation and know-how (Negroponte 1995) as well as relevance of education and localized processes of knowledge creation (Malecki 2004), which contributed significantly to the understanding of global competitiveness and forging trade patterns in the world as we know them today. Trade liberalization and deregulation policies in recent decades have led to increased global competition which companies face even on domestic markets from an easy inflow of products and technologies. However, this fact alone does not permit the limiting of competitiveness to the potential ability to export, which is at the core of diverse approaches defining competitiveness.

The ambiguity of the term competitiveness highlights the difficulties in defining it in such a way as to reflect the intertwined relations between national economies and enterprises. The same definition of competitiveness applicable for individual enterprises can hardly be extended to the country level, as any national economy is obviously not a simple aggregation of enterprises. The World Competitiveness Yearbook uses a definition which tries to incorporate both levels of analysis, defining competitiveness as ‘an ability of nations and enterprises to manage the totality of their competencies to achieve prosperity or profit’ (Garelli 2006, 1). In other words, countries and enterprises are seen as being tasked to master competencies in achieving prosperity, in the case of a state, and profit, in the case of an enterprise. However, this approach also reveals serious limitations. In particular, no link between national prosperity and enterprise performance is identified (Bris and Caballero 2015, 492).

This article will provide a snapshot of existing storylines (specified in the subsequent chapter) in BDI’s discursive practices in order to deliver an industrial view on sustaining a competitive advantage. The analysis will be performed in a manner to determine whether the environment which is facilitated by the state enables the maintenance of sustainable value generated by the industry or, in other words, whether it enables the industry to remain competitive. Furthermore, the analysis will help to develop an understanding of how industrial actors propose to avoid structural flaws and thus sustain the competitiveness of Germany’s manufacturing strength as it has been traced in the discursive pathways under analysis. The article is not intended to discover storylines which are missing or underrepresented in the institutionalized public discourse or to explore whether conflicting storylines lead to probable discursive regime destabilization of the institutionalized public discourse in Germany.

2. METHODOLOGICAL SETUP. DATA GATHERING AND PROCESSING

A firm move towards ambitious renewable energy targets is taking place in Germany at a time when the German self-perception of being a leader in energy and climate policy is dominated by the renewable energy frame. Generally speaking, the reality could be said to remain neutral until it is framed. It becomes framed at a point when the narrative flow of events is structured and prioritized (Norris 1995, 357), and when some aspects of a perceived reality are selected and made more salient (Entman 1993, 53) to shape public understanding of a particular issue and capture public acceptance at the final stage.

The decision about the most preferable alternative and a model of a better balanced pace of renewable power uptake and energy system adjustment is to a great degree the result of a choice among a variety of different understandings of the physical and social reality. These understandings manifest themselves in the process of social reality construction through discursive struggle. Thus the weighting of the various alternatives occurs when discourses compete to establish a particular version of reality. These understandings could also be viewed as manifesting themselves as the result of particular frames becoming dominant discursive practices.

Discursive interactions could be widely regarded as a subject matter of frame theory, purposed to find out how collective meaning appears and is affected by shared assumptions (Gamson et al., 1992). This article is broadly placed within the general premise of frame theory. As the inherent ambiguity of frames has not been overcome, resulting in the persistence of a variety of approaches to framing analysis, the argumentative discourse analysis conceptualized by Hajer (1995) is selected as the approach best suiting the research purposes. This approach suggests that actors, who share a social construct, formulate a specific discourse which is introduced through communicative interactions. They simply serve to produce or reproduce certain ideas, concepts or categorizations through certain practices which give meaning to the physical or social reality (Ibidem, 44).

In so doing, actors form specific coalitions around specific story lines, seen as condensed statements summarizing complex narratives (Hajer 2006, 69) through which actors suggest certain social positions or criticize alternative social arrangements (Hajer 1993, 47). The most well-known example is the acid rain pollution controversy in British politics conceptualized by Hajer through the prism of discourse coalitions advocating various discursive strategies towards environmental policy.

Although following Hajer's methodological guidance, interviews are nevertheless not part of the methodological setup. Since we deal here with an umbrella organization of German industry, it could be viewed from different perspectives. BDI could be regarded as a compound actor in addition to other actors who might have a stake in formulating the industrial discourse, but who are not included in the research design here. Alternatively, it could be viewed as a discourse coalition itself. We adopt here this very perspective. Interviews aim primarily at ascertaining the discursive positions of different actors in a discourse coalition. The actors we focus on here represent different ends of the spectrum when it comes to disputing risks for industrial competitive advantage. This is confirmed by BDI, which says on the one hand it *'[...] presents those enterprises that have suffered from the energy transition, because they have to shoulder rising energy costs. On the other hand BDI also speaks on behalf of the winners of the energy transition [...]'* (BDI 2013e). We proceed on the premise that the discursive positions of different industrial actors in this setting are treated as proportionally represented. BDI makes this explicitly clear: *'We are not there to represent individual interests, but we are trying, we have the task to shape the future of the entire German industry [...]'* (BDI 2013l).

The article analyzes BDI's documentation published in the German language as communication in English is very limited compared to the scope of information released in German. The body of materials used for the analysis includes press releases, statements and position papers made available at www.bdi.eu starting in the year 2009 (since the first materials were released) through the end of June 2015.

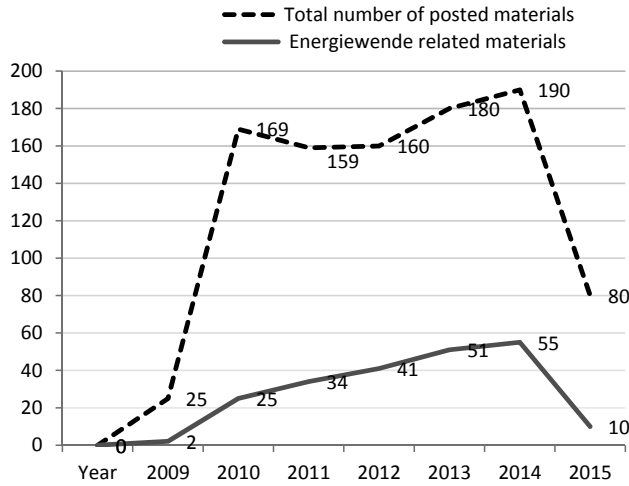


Fig. 1. Dynamics of Energiewende-related materials in 2009-2015

Source: author’s calculation based on BDI released materials.

All of the attachments to these published materials are included in the analysis, but are not counted as separate publications. Referenced materials are not to be treated as the only instances in which a particular issue is mentioned in BDI discursive utterances but were chosen rather as appropriate examples best depicting a respective BDI position. Altogether 963 materials were published during the period 2009-2015, out of which 218 were Energiewende related. The year 2014 was the peak year for such publications (Figure 1.).

In the initial stage, those materials were selected which relate to energy issues – in other words, those containing the word ‘energy’. Next, from the overall number of energy-related materials those related specifically to the Energiewende were identified. Shortlisting was performed on the basis of content analysis. Such analysis was necessary because in numerous instances written materials contained the word ‘Energiewende’ but only in passing or the word ‘energy’ was mentioned but in a context of little relation to Germany and the researched topic. At the next stage, issues related to the Energiewende but not compliant with the research question (e.g. energy efficiency in German industry) were excluded from the analysis. Such issues constitute a rather minor portion of the BDI discourse.

Table 1

Overview of BDI discursive practices

Dominant storylines	The industry needs secure, environment-friendly and cost-effective energy supply. The Energiewende has been implemented so far in a way that is likely to undermine competitiveness of German industry.		
Storylines	Insufficient Energiewende management	Distorted electricity pricing policy	Security of power supply at risk
Storyline elements	- Uncertain and unpredictable framework	- Expected ongoing rise in electricity price	- Slower than needed expansion of power grids
	- Little agreement between federal and state levels in implementing the Energiewende	- Needed EEG 2.0	- Lacking public acceptance for energy infrastructure projects
		- Value chains at risk and possible de-industrialization	- Increased risks of power grid instability
		- Threats to manufacturing employment	

Source: author’s analysis based on BDI discursive practices .

Storylines were identified from the total number of released materials dealing with the Energiewende as the most frequently repeated and consistent utterances covering a particular aspect of energy transition from the standpoint of potential risks posed by for the industry. Storylines were revealed in a result of data processing in NVIVO 10 software program. Coding of all Energiewende-related materials was done on the basis of a coding scheme embracing stages from defining of recording units (sentence as a basic unit for the purpose of this analysis) till coding of the whole corpus of texts based on the revised coding rules (Weber 1990, pp. 21-30, Neundorf 2002, pp. 125-137). Coding books defined coding rules and uncovered interrelations between the topics in BDI discourse.

Each storyline was arranged at the top level of the hierarchy as a parental node (codes) in NVIVO. All discursive utterances were organized into themes and coded as child nodes (storyline elements, see Table 1.). If relevant for several subfolders, they were arranged under more than one parental or child node. Components of these storyline elements (e.g. slow implementation of the Energiewende discussed within the storyline element of uncertain and unpredictable framework) were coded as subfolders of child nodes. This process helped in gathering evidence about the relationships between the storylines and in summarizing the arguments used by BDI in articulating the probable implications for the competitiveness of German manufacturing as the result of the Energiewende.

3. DISCUSSION

The analysis of BDI discourse covers a timeframe from the beginning of 2009 until July 2015. For this reason, many aspects concerning the competitiveness of German industry were debated within the so-called Energiewende 1.0 (Moec, Böttcher, and Schneider 2013). Discussed as needed and subject to reconsideration by the end of 2013, many of these aspects were addressed in the Energiewende reform which went into effect in 2014.

In general, the Energiewende has been addressed in BDI discourse as a grand project which is ‘politically chosen’ (BDI 2011e) and as one of the ‘biggest homemade’ risks to the competitiveness of German

industry (BDI 2012b). Emphasizing these attributes, BDI endorses the Energiewende but does it under certain conditions such as maintaining a predictable regulatory environment, provision of competitive electricity prices, and guaranteed stability of the power grid (BDI 2011e). All of these aspects are widely covered in BDI discourse, though in different proportions. In terms of identified risks, the greater portion of discursive utterances (165 references) covers issues pertinent to insufficient Energiewende management. The second most important topic is power pricing policy (163 references), followed by security of energy supply (69 references).

3.1 Insufficient Energiewende management

Almost every time management issues are concerned, different possible scenarios are mentioned. This hinges upon many factors. The Energiewende is seen as a great opportunity, if wisely implemented, which nevertheless *'could become a nightmare and cause unemployment'* (BDI 2014a), if poorly managed. It has even been stated in a manner that *'it could not be the case that Germany opts for the Energiewende and then forgets to implement it reasonably'* (BDI 2011e). The Energiewende is repeatedly said to be managed in such a manner so as to provide clear control (BDI 2012g), realize opportunities and minimize risks (BDI 2013a).

How realistic a particular scenario will become depends upon how stringent the management of the Energiewende will be in relation to the reforming steps and speed of the transformation process. As of 2012, implementation of the Energiewende has been assessed as *'unsatisfactory'* (BDI 2012b). BDI argues that implementation of the Energiewende has worsened recently. In particular, it was observed that in the third year of the Energiewende its economic foundation *'threatens to get out of control'* (BDI 2014g). In terms of integrity, the adopted measures have been seen as not always consequent and the need to develop *'coherent overall concept and to adhere to it'* (BDI 2010b).

3.1.1. Uncertain and unpredictable framework

When it comes to investments in the German economy, a stable and reliable framework is immediately mentioned as a central requirement to attract more investments and strengthen innovations. However, the existing legislative and administrative framework is regarded as unreliable because the rules of the game change unexpectedly amid the transformation process. Major storyline elements identified in this regard are: (a) uncertainty about the progress of the Energiewende and (b) slow implementation of the Energiewende.

Weakening of industrial competitiveness is an essential element of the framework-related storyline. An uncertain framework is regarded as a major reason for sluggish private investments. With reference to the German Institute for Economic Research (DIW Berlin), BDI reports that Germany's biggest weakness from a comparative perspective is low investment activity (BDI 2014i). Companies are described as being hesitant to make investments because of uncertainty about the Energiewende's progress and possible burdens which could be imposed upon them in the future.

What is more, energy-intensive enterprises have already disinvested, according to BDI President Ulrich Grillo (BDI 2013j). Uncertainty about further economic development also hinders capital expenditure (BDI 2013m). In some areas, gross investment no longer exceeds depreciation (Ibidem). The uncertain framework lies behind such reversals. The need for more investments is critical in order for Germany to remain an industrial stronghold. The situation for the time being is described as an investment bottleneck.

Slow implementation of the Energiewende, as seen by BDI, is attributed to bureaucratic hindrances in Germany. These take a prominent role in explaining why Germany now finds itself facing an investment bottleneck. Emphasis is placed in this regard on approval procedures, which are very long lasting and

in many instances the process of obtaining approvals has taken up to 10 or even 15 years (BDI 2010g). Regulatory approval procedures feature two key aspects – namely, their applicability for different sorts of projects and timeline. BDI points out that the one-size-fits-all logic is not applicable when it comes to state-funded projects in the energy sector.

3.1.2. Little agreement between federal and state levels

BDI states that energy and climate policy has been addressed on many political levels (BDI 2012g) and little compliance has been evident between the central government and the federal states in pursuing the *Energiewende*. BDI says that Germany implements ‘17 *Energiewenden*’ (BDI 2013f), arguing that ‘*the federal states maintain 16 different Energiewenden rather than to agree with the federal government on a national and coherent overall strategy*’ (BDI 2014m). An agreed approach is required in particular on the issues of constructing high-voltage transmission lines. To be noted, the amended Energy Grid Expansion Act (EnLAG) foresees easier planning and authorization procedure for transmission lines ranked as necessary and urgent. Significant number of transmission lines is now at the stage of planning (BMW 2016, p. 11). Besides, underground solutions for high voltage transmission lines, considered as one of technical solutions for some routes, are still being tested (Ibid, 6-10). This is an additional reason for a delay of grid expansion.

Beyond what has been stated, the fact that dozens and even hundreds of targets exist (BDI 2012a) which are not harmonized with each other is criticized by BDI. These statements were much in line with those of many experts who indicated at least several years ago that a lack of policy coordination persists (Schwägerl 2013).

3.2 Distorted electricity pricing policy

The topic of wholesale electricity prices is critical when it comes to the issue of the competitiveness of German industry, which is threatened by rising electricity prices. The situation for industrial consumers is compared, for example, with the situation in Italy, arguing that ‘*the German and Italian industries are confronted with the highest electricity prices in the EU*’ (BDI 2014h). BDI also takes the example of France, where electricity prices are lower and French industry is not burdened by an EEG surcharge. Electricity prices are also compared with those in Sweden, noting that they are almost 65% higher for industrial consumers in Germany than in Sweden or France (BDI 2013g).

3.2.1. Expected ongoing rise in electricity price

While touching upon the high price tag for consumers, BDI suggests that Germany has to strike a balance between affordability, sustainability and security of supply. This issue is frequently touched upon with regard to energy-thirsty industries. BDI, however, is concerned not only about the future of large energy-intensive consumers. Since medium-sized industrial enterprises (the ‘*Mittelstand*’) are the backbone of the German economy, they are given special attention in BDI discourse. According to BDI, 67% of surveyed middle-sized industrial companies in 2012 saw an increase in energy prices as a major risk factor for the competitiveness of German industry (BDI 2012f). In 2014, when asked about their prospects for the next 2 years 73% of companies shared this view, arguing that this risk factor will persist (BDI 2014b).

BDI noted that ‘*the high energy costs will continue to rise the new EEG will not reverse this trend*’ (BDI 2014l). This forecast concerns not only energy-intensive industries or other categories of industrial consumers but also private consumers. BDI highlights the fact that private consumers will also be affected because the energy transition is being implemented in a way that adds to the expectation that electricity prices for all

categories of consumers will rise further. This might be regarded as an attempt to influence the high support level which the Energiewende has enjoyed among ordinary citizens over many years.

3.2.2 Needed EEG 2.0

BDI emphasizes repeatedly what high a burden German industry is bearing within the Energiewende. Industrial consumers pay 50% of EEG costs, totaling over 10 billion euro annually (BDI 2014k). BDI makes clear that only energy-heavy industries are subject to exemption because they compete internationally and provide jobs. According to BDI, such industries comprise a small number. BDI has regularly emphasized that more than 95% of enterprises are not exempted (BDI 2015a).

One of the important discourse pathways is BDI's readiness to protect exemptions for industrial consumers, should they become at risk through any new EU-regulations (BDI 2014f). BDI is precise about what has to be done in order to decrease the burden of energy transition. In particular, BDI calls for terminating payment for electricity, which has not fed into the grid ('Wegwerfstrom') (BDI 2013l). Besides, BDI also proposed to abolish the compensation rule for new PV-installations in order to avoid such situations wherein renewable installations receive a fixed compensation for the produced electricity, despite the fact that the electricity was not fed into the grid due to network congestion. In the context of the EEG-reform, BDI argued in 2013 that producers of renewable electricity should themselves manage the sale of the electricity they generate (BDI 2013b), moving away from the produce-and-forget concept.

3.2.3 Value chains at risk and possible de-industrialization

Arguments about the competitiveness of German industry center around the preservation of closed value chains because the success of Germany as an industrial country is based namely on '*well-functioning value chains including the energy-intensive industries*' (BDI 2010f). The possibility of driving the production of energy-intensive industries abroad is identified as a major storyline element debated in this context, while their relocation abroad is seen as a risk factor for the integrity of closed value chains in Germany (BDI 2010g). Specialization makes participants of value chains increasingly interdependent. As ample empirical evidence reveals, the overwhelming majority of German companies have energy-intensive suppliers (Bardt and Kempermann 2014, 9). Their removal from the value chains is viewed as a real threat for the competitiveness of German industry, even more so as they cooperate in innovation networks, which is another, if not a bigger, threat to sustaining competitive advantage if this cooperation is broken down.

Already in the year 2010 BDI warned about '*creeping exodus*' of energy-intensive industries from Germany. This process is believed to be '*creeping and quiet*' (BDI 2013h). BDI notes that it is not possible to speak in term of exact numbers because it does not happen overnight, adding that '*the energy-intensive industry has reinvested only 85% of the depreciation expense in the recent years. That is, we see a slow capital consumption, and that makes us very worried already*' (BDI 2014j). This exodus of investments is connected with EEG-levy amendments, should energy-intensive enterprises be not exempted. This topic is brought into the all-European context with the statement that creeping exodus will result in an essential part of the European value chains possibly being disrupted (Ibidem). This aspect, however, has not received frequent attention except in the statement that '*de-industrialization, as it has been unnoticeably taking place in many Western countries, may not be an option for Germany*' (BDI 2010c).

The necessity to uphold the competitive advantage and closed value chains has been articulated in comparison with, most often, the USA, but also with China. Decreased electricity prices in the US strengthen the location of North America, which is a direct competitor of Germany for many products on the global market (BDI 2012h). Concerns about China are a bit different in character. China is seen as striving 'to

climb the value chain upwards' (BDI 2012f). In this regard, BDI notes that *'we must work hard to secure our lead'* (Ibidem). In the 12th Five-Year Plan, China proclaimed a shift to higher value-added products and services, especially in the segment of production equipment. Citing the German Engineering Association (VDMA), BDI argues that Germany has to take these developments very seriously and analyze possible consequences for German mechanical engineering (BDI 2014e).

3.2.4 Threatening manufacturing employment

While assessing possible implications of weakening competitiveness of German manufacturing sector, one of the major arguments for an immediate action has been the risk of unemployment, voiced in BDI discourse as early as in 2010 (BDI 2010e). In this context, unemployment is linked with exemptions from the EEG-levy for energy-intensive enterprises. It should be noted that part of the discourse about the risk of job losses is constructed in a manner to persuade wider audiences to maintain a more attentive stance towards the Energiewende implementation. To achieve this objective, BDI notes repeatedly that energy-intensive industries provide *'almost a million jobs'* (BDI 2013f). Should exemptions not be provided and should non-competitive energy prices persist, many enterprises would close or leave Germany (BDI 2013h).

3.3 Security of electricity supply at risk

BDI argues that the EU 20-20-20 targets do not set any targets for energy security and competitiveness, though they are badly needed (BDI 2014d), and the fact that none are set is addressed as a *'devastating'* reality (BDI 2013i). Discursive patterns reveal several lines of argument that this reality is devastating and especially challenging for Germany because of the Energiewende.

3.3.1. Slower than needed expansion of power grids

The need for power grid expansion was recognized at the early stage of the Energiewende, stressing that expansion should be a quick process (BDI 2010a). In 2011 it was noted that the grids were operating at their maximum transmission capacity (BDI 2011a). As grids have not been expanded as quickly as hoped, BDI made public a statement that the expansion at least as of 2012 has lagged far behind schedule, in particular offshore grid connections (BDI 2012d). In mid-2016 only 35% of transmission lines were completed. Approximately 75% of them are 380 kV lines. By the end 2017 transmission lines re going to be completed by approximately 45% and 85% up to the year 2020. This is a considerable delay in comparison to the original planning (BMW i 2016, p. 10).

This has been a significant issue not only for Germany but also for its neighboring states as their grids are used during peak times. Being affected by overflow of power from the German north, these countries announced measures to be taken in order to avoid an overload of their grids, as the Czech Republic has already done (Černoč et al 2015). Czech Republic is now building its first phase shifting transformer on the border with Germany which is to be commissioned in late 2016.

3.3.2 Lacking public acceptance for energy infrastructure projects

In general, the Energiewende has broad public support. When it comes to specific infrastructure projects necessary to make the Energiewende a reality, however, public acceptance is not always in place. In a broader context, slow regulatory approval procedures are indicated as one side of the coin while public acceptance is represented as the other.

In BDI discourse, public acceptance is mentioned primarily in connection with the expansion of high-voltage power grids. Lack of public acceptance is regarded as a factor which may constrain grid expansion. This was demonstrated by one of the most ambitious transport projects in Germany – Stuttgart 21, known for mass protests and a dramatic escalation of tensions. The project was not realized even after it was reconsidered. This aspect is an additional source of concern for BDI (BDI 2011d). For this reason, BDI called in 2015 for elaboration of new instruments for citizen participation and mediation (BDI 2015c).

3.3.3. Increased risks of unstable power grids

Increased instability of power grids is addressed as a factor which weakens German industry's competitiveness while probability of supply interruptions hinders the attractiveness of Germany as an investment location. Net fluctuations are a significant worry, even those lasting only fractions of a second. Industrial companies with sensitive equipment, for instance in the paper industry, have had hours of production losses due to smaller net fluctuations in the millisecond range. As a result *'this causes costly damage to the company and weakens the industry in Germany'* (BDI 2011b).

BDI also discussed increased instability of the power grid in connection with quick nuclear phase-out. As the decision about nuclear phase-out is extremely relevant not only for the security of energy supply but also for the economy overall, time for adjustment was needed (BDI 2011a). The industry, however, was deprived of this time according to BDI.

CONCLUSION

This article explored how the Energiewende affects Germany's industrial competitiveness and what kind of risks it poses for the German manufacturing stronghold as discussed in BDI discursive practices. Findings suggest that the Energiewende, at least in its form until EEG reform in 2014, put the industry at a disadvantage compared to its global peers and is likely to undermine the competitiveness of German industry. This disadvantage resulted from the unreliable legal framework and uncertainty as for the future course of the Energiewende. Other hindrances includes slow implementation because of high rates of bureaucracy and lack of coherence between federal and state levels. The cumulative effect of these factors is that they impede investments and result in weakening competitiveness.

This disadvantage also results from a distorted pricing policy, which dominates BDI discursive practices. Probable de-industrialization is quite regularly voiced as one of the possible implications of the Energiewende, the so-called 'creeping exodus' of energy-intensive industries from Germany. The issue of competitiveness is also disputed in the context of the lack of public acceptance for infrastructure projects without which the Energiewende is not a realistic effort in the long run. This is one of the major storyline elements when it comes to power grid expansion and security of energy supply.

Furthermore, BDI illustrates how serious the implications of the Energiewende might be for ordinary citizens. In doing so, BDI points first and foremost to a probable increase in the unemployment rate in energy-intensive industries and forecasts a continuous rise in electricity prices for different categories of electricity consumers.

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