

Framing industrialization of the offshore wind value chain

– a discourse approach to an event

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Abstract

The paper explores value chain governance through a discourse approach to an event which included an exhibition and a conference. This approach appears promising for investigating industries in their formative phase and is particularly relevant for new renewable energy sectors. By studying the European offshore wind value chain, the paper investigates the coupling between wind industries and offshore industries as an encounter of various conventions. The key speakers at the conference, particularly those from the utility companies, introduced new principles for organizing the value chains they are leading, in order to reduce costs, and turn the immature sector into a mature one. Their storyline of industrialization by standardization breaks, however, with the storyline demonstrated by the firms in offshore oil and gas, and maritime industries at the exhibition. The latter offshore suppliers find evidence of quality in their business history and their trust-based relations to their clients. Theoretically the paper contributes to the global value chain governance debate by offering another perspective on power. The discourse approach helps us explain how influential actors could enforce one convention over another. The paper contributes methodically by suggesting a discourse approach to events. Events appear as a significant arena for negotiating industry formation and convenient for researcher's data gathering for text analysis.

Keywords: discourse, events, conventions, value chain governance, offshore wind,

1. Introduction

There has been a marked growth in the literature on global value chain governance since the mid-1990s (Gereffi, 1994, Gereffi, Humphrey and Sturgeon, 2005). In succession new perspectives have been introduced and efforts made to build comprehensive theoretical frameworks (Ponte and Sturgeon, 2014). This paper is inspired by the strand of governance as normalizing literature (Ponte and Gibbons, 2005; Ponte and Sturgeon, 2014) and convention theory (Boltansky and Thévenot, 2006). The paper contributes to the debate on governance of value chain, by offering another perspective on power. The aim is to explore the formation of an industrial value chain through a discourse approach.

Industrial actors negotiate how to organize production, not just in-house but also in relation to external industrial partners. The coupling of industrial partners along a value chain is the focus of this papers. As different industries constituting a value chain, may bring along different legacies and practises, their encounter is critical particularly during the formative phase of a value chain. The

development of a well-functioning value chain relies on mutual understanding and collaboration between the parties constituting the value chain. Renewable energy industries are particularly challenging to conceptualize as they do not evolve through pure market mechanisms, but are to a large extent subject to political decisions and regulations (Essletzbichler, 2012). New renewable energy sectors are driven by climate change and related policies, and are still dependent upon state support (Dawley, 2014; Ponte, 2014).

In this paper the focus of attention is the formation of the value chain of the offshore wind sector in Europe. In contrast to previous studies focusing on the value chain related to turbine production, this study focuses particularly on the deployment chain constituting a considerable share of the value creation in the offshore wind sector. It appears as an obvious value chain to enter for firms in offshore oil & gas (O&G) and maritime sectors. The paper addresses the following questions: Which industrial legacies and practices characterize different parts of the offshore wind value chain? What are the value chain challenges that are conceived by the industry leaders, and which measures for the value chain are negotiated?

Industrial events are likely to be concrete arenas in which negotiations over formation of value chain takes place. Data is collected from an event significant for the related industries. Inspired by the concepts of temporary clusters and field configuring events, texts have been collected both from a conference and a trade fair at the event EWEA Offshore 2013. As such, this paper suggests an alternative methodology relevant for studies of industries in their formative phase. As the discourse approach is capable to reveal underlying tensions and power relations between the constitutive parties, it is a promising approach for investigating evolutionary dynamics of value chains.

The paper is organized in seven sections. After this introduction, the second section has theoretical discussions on value chain governance and events as an opportunity for negotiations. In the third section, the offshore wind value chain is explained as an encounter of two different industries. The fourth section presents a discourse perspective on events. Then follows the fifth section on empirical analyses. The sixth section discusses conventions and discourses. Finally, in the seventh section the paper concludes.

2. Evolutionary dynamics of value chain governance – towards a discourse perspective on power

The literature on global value chain (GVC) governance has been growing since the seminal works by Gereffi and colleagues in the mid 1990s. GVC analysis focuses on the movement of goods or services from producer to consumer and investigates flows of material resources, finance, knowledge and

information between buyers and suppliers (Ponte and Gibbon, 2005). Three approaches to GVC has evolved in the following chronological order: I) governance as driving, II) governance as linking, III) governance as normalizing. Ponte and Sturgeon (2014) combine the latter two approaches in a comprehensive framework of theory.

I) *Governance as driving* put the focus on the economic power lead firms have over first tier suppliers and other chain participants. Lead firms are in a particular position to influence who does what along a value chain (at what price, to which specifications and at what delivery time) (Ponte and Gibbon, 2005). A distinction is made between buyer-led GVC and producer-led GVC pointing at the actor, who has relatively more power than others in the GVC. This dichotomy is, however, not able to reveal nuances in recent organization of global industries and is neither capable of explaining their dynamics (Gereffi et al., 2005; Ponte and Sturgeon, 2014).

II) *Governance as linking* elaborate how dyadic transactions between buyers and sellers is organized, depending on: a) the demand for information to be exchanged between different activities in the value chain, b) the extent of information that could be codified, and c) the suppliers' capability to comply with requirements of the transaction (Gereffi et al., 2005). This framework is able to explain further variations of coordination and more and less as unbalanced power relations between different positions in the value chain. Still it fails to see that the different forms of co-ordination may coexist along the value chain. As the framework neither recognize ripple effects of co-ordination, it is unable to reveal the dynamics of governance of the complete value chain (Ponte and Gibbon, 2005). 'Governance as linking' presupposes that the economic agents are able to make rational decisions based on objective information in order to maximize own utility. As such, the approach is challenged by intersubjective perspectives paying attention to cognitive and normative aspects of governance.

III) *Governance as normalizing* is about adapting a practice in line with norms (Gibbon, et al., 2008). This approach investigates how a discursive framework shapes the relations between buyers and suppliers (Ponte and Sturgeon 2014). Much of the work on governance as normalizing relies on convention theory (Ponte and Gibbon, 2005; Ponte and Sturgeon, 2014).

Convention theory was originally used to explain internal coordination in firm organization (Thévenot 2001). Quality conventions has later been used to explain how coordination takes place between firms in value chains (Ponte and Gibbon, 2005; Ponte and Sturgeon, 2014). Conventions are defined as a broad group of mutual expectations. Conventions coordinate economic actors by defining specific normative frameworks for actions. As such, they work as guides for action, but are also collective systems that legitimize those actions (Ponte and Gibbon, 2005).

Boltansky and Thévenot (2006) investigate the relation between agreement and discord in society. They recognize the foundation for agreement in what they call a higher common normative principle (Boltansky and Thévenot, 2006). The two scholars introduce us to inspirational, domestic, opinion, civic, market and industrial worlds. My brief presentation will not go into details, but rather make a major distinction between I) 'domestic conventions', II) 'industrial conventions' and 'civic conventions', which I find appropriate for the particular industries constituting the value chain of offshore wind. In the domestic mode of coordination the past inform the present. Relations are durable based on proximity, trust, faithfulness and loyalty. A subordinate is always very sensitive to the consideration and trust the superior show him/her and have to ensure the permanence of the tradition.

Scholars of global value chain governance has extended the definition of relations between superiors and subordinates to describe a kind of relation between clients and suppliers under the domestic quality convention (Ponte and Gibbon, 2005; Ponte and Sturgeon, 2014). Under domestic quality convention is uncertainty about quality solved through trust, which means long-term relationships between actors (Ponte and Gibbon, 2005). Suppliers produce specialized and dedicated products to comply with the desires of buyers and users. This corresponds to the concept of 'flexible specialization', pointing at economic actors who are able to cope with unstable demands by switching smoothly between alternative products for alternative markets (Piore and Sabel, 1984).

The industrial world of Boltansky and Thévenot (2006) is one in which technological objects and scientific methods have their place and experts are assigned a key role. The ordering of the industrial world is based on the efficiency of beings, their performance, their productivity, and their capacity to ensure normal operations. These capabilities extends the present into a future, which is possible to predict. What counts is 'tomorrow'. Through the use of data expressed and processed in numbers, standardization and formalization make it possible to measure objects and activities. In short, the industrial world is about creating a 'technically predictable universe'. In this paper I connect this future orientation to lead firms' efforts to mature the industry of suppliers to the value chain.

Under an industrial convention, actors are able to have almost arm's length relations, as far as they are able to embed complex information in codified form. Uncertainty about quality is solved through inspection or instrument-based testing. This could be ensured by a third party via certification against a set of given norms and standards (Ponte and Gibbon, 2005). A standard needs, however, not be implemented by a standard setting organization. A standard is often the result of battle between competing designs (Garud and Karnoe, 2003; 2012). When a standards is commonly accepted or when the parties have agreed on the objective measures for the exchange, the industrial

convention work quite in line with the market convention. Competition is based on price as quality is evaluated in regards to codified norms. Norms and standards are inclined to align with more general narratives circulating in society (Ponte and Gibbon 2005). In regards to this paper it is worth mentioning the discursive aspect of the codification of standards (see Gibbon et. al., 2008).

Standards reduce transaction costs between buyer and seller, reduce variety, and facilitates economies of scale (Gereffi et al., 2005). As such the industrial convention corresponds to the concept 'mass production'. Piore and Sabel (1984) explain how mass production of standardized products have been supported by Keynesian policies of demand stabilization.

The civic convention mobilizes collectives around common interests (Boltanski and Thévenot, 2006). The civic world is related to solidarity and responsibility. Civic conventions are typically embedded in political dynamics (Ponte and Sturgeon 2014). Under a civic convention economic and non-economic actors are collectively committed to comply with ethical standards in society. The identity of a product is related to its impact upon society or the environment (Gibbons and Ponte, 2008). Civic convention converge with the industrial convention as both believe in standardization, scientific methods and instruments, and future orientation, but adds broader ethical, environmental and political aspects.

Different conventions may exist side by side both along and between related value chains. Ponte and Gibbon (2005) suggest that dominant quality conventions are able to 'travel' along a value chain. Compared to domestic quality conventions are industrial quality conventions more transferable. Ponte and Sturgeon (2014) argue that some influential actors have the normative power to enforce one convention over another, so the convention finally dominates the complete value chain. The two scholars, do not explain explicitly how this could happen, even if they more generally mention the discursive dimension that frames buyer-supplier relations.

In this paper I argue that dominant actors, as lead firms, may impose the industry convention over the domestic convention by activating discourses as they negotiate how to make the industry mature. The concept of industry life cycles says that product variety tends to be reduced as the industry matures. Dominant designs allow for a standardization of production. The use of standards make it possible to exploit economies of scale. As products become more homogenous and comparable, the basis of competition shift to product price. When the margins are reduced, cost efficiency is achieved by economies of scale in production (Utterback and Abernathy, 1975; Utterback and Suarez, 1993).

3. The offshore wind value chain – an encounter of different industries

Offshore wind value chain is an interesting study object for three reasons: I) The value chain couples two industry sectors bringing contrasting business legacies and practices along. II) It is a value chain in a phase of formation, where lead firms are trying to transform it into a mature one. III) It is a value chain under strong influence of politics, nationally as well as internationally.

The offshore wind sector has been evolving since the world's first offshore wind farm opened in Denmark in 1991. Growth accelerated in the mid-2000s (Steen and Hansen 2014). Europe has been the traditional leader in the wind power industry, also in offshore wind industry (Lema et al., 2011; Wieczorek et al., 2013). Typically, the offshore wind sector has been recognized as branching off from the onshore wind sector (see e.g. Markard and Peterson, 2009). However, the combination of the terms 'offshore' and 'wind' reflects a sector relying on both wind and offshore industries. The evolution of the offshore wind sector may be characterized from two contrasting angles, not only metaphorically but also literally as (1) wind industry moving into water, and gradually into deeper waters, or merely as (2) offshore operations.

First, for more than a decade the onshore wind sector has been studied by social scientists. The wind turbine manufacturing industry has attracted more academic attention than value chain suppliers (Garud and Karnoe 2003; 2012; Menzel and Kammer, 2012; Silva and Klagge, 2013; Simmie, 2012). However, the complete wind value chain (including that of offshore wind) has for the first time studied by Lema et al. (2011).

Lema et al. (2011) identify wind power industries as having two value chains: (I) a deployment chain normally led by utility companies or other project developers, and (II) a manufacturing chain led by wind turbine manufacturers. The deployment chain covers all aspects related to deployment and utilization. The full range of deployment activities includes planning, installation, operation and maintenance related to logistics, vessels and other marine supply services. The manufacturing chain is concerned with what is considered key equipment (i.e. the design and manufacture of turbines and related components) (Elola et al., 2013). However, there are no strict divisions between these two types of value chains, as their respective lead firms work closely together and form a bipolar value chain (Ponte 2014).

It is the extent and character of the deployment chain that make the offshore wind sector different from onshore wind sector (Lema et al., 2011). Larger installations in deeper waters farther from shore require relevant offshore expertise and capabilities in addition to those gained from onshore wind activities. The drive for 'further, deeper and larger' spurs the development of a technological development that is increasingly decoupled from the development of onshore wind (Sommer 2015).

The obvious reason is that offshore conditions are different and more demanding than the conditions onshore, and hence additional suppliers are involved. Higher fixed capital costs stems not only from turbine production, but also from other parts of the value chain such as design, foundations, installations, and grid connection (Snyder and Kaiser 2009). Offshore wind is more capital intensive, requires more financial resources, and hence more long-term planning, and investments are more often large scale and thus dominated by larger corporations (Markard and Petersen 2009).

Second, more recently, the offshore wind sector has been studied from the perspective of maritime industries, with possible roots in shipbuilding in Germany (Fornahl et al., 2012) or from the perspective of Norwegian O&G suppliers diversifying into offshore wind (Steen and Hansen 2014). From the offshore O&G and maritime industry point of view, the offshore wind sector (particularly the deployment value chain) needs maritime supplies corresponding to those of O&G (Steen and Karlsen 2014; Hansen and Steen 2015). Reuse of offshore structures' designs for O&G for offshore wind purposes is mentioned in a study already in the early 1990s (Germanisher Lloyd, Garrad Hassan, 1993). The study reflected upon the obvious technological relatedness between the offshore O&G production platforms and offshore wind turbine support structures with regard to environmental exposure and installations and maintenance challenges. The two sectors operating offshore (i.e. O&G and offshore wind) are both recognized as capital-intensive and project-based industries.

The offshore wind sector is considered as opening up a new market options for O&G suppliers. The resource base gained from engagement in O&G and other maritime sectors could provide competitive advantages for participation in the offshore wind sector. These industrial capabilities and know how are ever more relevant as offshore wind projects are developed farther from shore and in deeper waters (EWEA 2013). Actors in O&G are increasingly participating in the offshore wind sector, and this move offers the possibility of cross-fertilization of skills and knowledge across the sectors.

Economies with a stronghold in maritime and offshore O&G industries may diversify their industries and supply the offshore wind sector. In regions around the North Sea, spillovers from mature O&G industries to immature offshore wind industries appear obvious (Menzel unpublished). Some Norwegian suppliers to the O&G sector generally assert their ability to reuse existing resources smoothly as they enter the European offshore wind market as an export activity. They may provide the offshore wind sector with know-how on design, engineering and fabrication of foundations and subsea equipment, but also material resources such as vessels and infrastructure (Steen and Hansen 2014). Wind industries (manufacturing) and maritime and offshore O&G industries are coupled as buyers and sellers in the value chain of offshore wind.

Although the wind industry and offshore suppliers relate to and depend on each other, the offshore wind sector is not just a matter of prosperous combinations of existing assets from mature industries complementing each other. This is also about coupling of two industrial sectors bringing particular industrial legacies along – respectively from onshore wind/turbine manufacturing sector and from maritime/offshore O&G sector. The authors of a report published in 1993 seemed to be aware of contrasting practices in different sectors: the need for cutting cost by serial production (large number of nearly identical units of support structures) for offshore wind, versus ‘one off’ production of platforms customized for particular offshore fields (Germanischer Lloyd, Garrad Hassan, 1993). As such, they suggest that different conventions exist side by side in the value chain. Nevertheless, the question how the encounter of contrasting industrial legacies and practices work as the offshore wind industry matures, is open and a subject for exploration in this paper. Industrial events may work as an encounter of various actors and opportunity for negotiation over which sectors’ conventions and standards are to govern the value chain.

4. A discourse perspective on events

4.1 Temporary clusters and field configuring events

The bounded time and space context of events makes them an interesting case to study for geographers and regional scientists. Economic geographers have studied events which take place in the context of temporary clusters. Some have found that trade fairs have a role in knowledge exchange and the creation of global networks (Bathelt and Schuldt, 2008; Power and Jansson, 2008; Bathelt and Zeng, 2014; Henn and Bathelt, 2015). At the same time field configuring events (FCEs) has emerged as an approach within organization and management studies. FCEs are temporary social organizations such as conferences, trade fairs and festivals. FCEs assemble diverse members of an organization field such as an industry, in order to shaping professional, technological or regional domains (Hardy and Maguire, 2010; Lampel and Meyer, 2008; Oliver and Montgomery, 2008; Schüssler, Rüling, Wittneben, 2013).

Both of these approaches (temporary clusters and FCEs) aim to reveal the substantive impacts of events or at least discuss the possible effects of such events through the creation and development of networks or evolution of industrial fields, respectively. The FCE approach has also inspired economic geographers as Henn and Bathelt (2015) who consider the approach relevant for studying the early development of a field. The two scholars find studies of business conferences as a neglected topic.

They see events as short-lived professional get-togethers of people (having similar educational background, qualifications and skills) intensively exchanging knowledge and generating novel ideas relevant for an organizational field or a certain industry. In their case studies, however, the business conferences have not triggered disruptive changes of the field, and they allow the conferences just a field reproducing function. Generally, they find methodological shortcomings in the FCE approach as evidences of field impacts require retrospective studies. They rather prefer the temporary cluster approach (Henn and Bathelt 2015). Differently to the above-mentioned scholars, I recognize the discursive dimension as latent in FCE approaches.

Since the late 1970s discourse perspectives has been become widely used in the social sciences in general and in political science in particular. By contrast, this approach has almost been neglected in economic geography (Varro, 2015). Negotiations are somehow 'taking place'. Some events may work as significant arenas for negotiations, as far as they gather a wide range of stakeholders, including elites. In addition to business people, representatives from regulatory agencies, civil society associations, and media, as well as researchers attend the events (Ponte, 2014). At conferences such actors have roles as speakers, discussants, listeners, and at trade fairs business people are exhibitors as well as spectators. Speakers perform for an audience that is present and for a wider audience that is virtual or accessible via media. Here are utterances, in form of speeches, written texts and images, compressed in time and space. A discourse approach to events is highly productive in a concentrated context of utterances, meaning creation, and knowledge dissemination.

Conferences are sites of 'industry identity formation' (Ponte, 2014). Events are probably able to frame the maturing of a value chain as key stakeholders negotiate future development, policy frameworks, strategies and measures. While it is beyond the scope of this paper to investigate the direct effects of events on industries, I identify how measures addressed at the conference, may help shape value chains facing maturity. The focus is particularly put on the role lead firms have in preparing and framing the maturing process of their supplier industry.

GVC scholars find that the normative strand of GVC governance literature underscore the discursive dimension of the framing of buyer-supplier relations' (Gibbon et al., 2008). Gibbon and Ponte (2008) find a weak point in GVC analysis' neglect of expert knowledge and practice. Inspired by their examination on how expert discourses are reflected in academic business journals and textbooks and trade magazines, I intend to introduce discourse perspective on the analyses of value chain governance. The discourse approach offers an alternative perspective on power relations in global value chains than the ones we find in traditional governance approaches.

Discourse is shared meaning structures or shared way of apprehending the world. Individuals get a mutual understanding of what a problem is and how to cope with it (Swaffield, 2016). Discourse defines what can be said about a topic. Foucault sees discourse as 'an institutionalized specialist knowledge, including the corresponding ritualized forms of speech, modes of action and power-effects' (Keller, 2013:29). He uses the French term 'dispositif' as an apparatus – an interwoven bundle of means (Keller, 2013). It is a set of measures that are prepared for political, economic or technical purposes. Through a dispositif discourse may 'intervene in the world' and as such achieve effects. A dispositif could be laws, regulations, formal procedures, codes of behaviour, sanctions, objects, or technologies (Keller, 2013). In the present study, I first relate dispositif to regulations and policy instruments for stimulating growth of a renewable industry sector. The introduction and maintenance of subsidy schemes is one example. Second, I connect dispositif to standardization and industrialization of value chains in order to make the industry mature. As such, are dispositif in general and standards in particular, core to my reintroduction of a power in the analysis of value chain governance.

4.2. European Wind Energy Association and EWEA OFFSHORE in Frankfurt 2013

The European Wind Energy Association (EWEA) was founded in 1982 as a non-profit association for the wind industry, promoting wind power in Europe and worldwide. EWEA (now WindEurope) is the world's largest association for wind energy and has over 600 members from almost 50 countries. They include stakeholders holding various positions along the value chain, such as wind turbine manufacturers with a leading share of the world wind power market, component suppliers, research institutes, national wind and renewables associations, developers, contractors, electricity providers (utilities), finance and insurance companies, and consultants. Corporate members of the board are mostly representatives of utility companies and turbine manufacturers. The association establishes policy positions and coordinates international policy communications, and lobbies to create a framework appropriate for the development of the members' businesses. It cooperates with industry and research institutes on a number of market development and technology research projects, and organizes EWEA industry events.

Annual wind energy conferences and exhibitions have been organized in Europe since 2004. Offshore wind conferences and exhibitions are organized every second year. EWEA OFFSHORE 2013, held in Frankfurt 19-21 November, was a significant event for actors in the wind energy sector internationally and in Europe particularly. EWEA OFFSHORE 2013 attracted 6600 participants from more than 50 countries, including 35 regional, national and international associations. The participants mainly came from Northern and Western European nations, particularly the countries

adjacent to the North Sea, reflecting the geographical distribution of offshore wind actors as well as the geographic accessibility of the event in terms of distance travelled. A lot of significant stakeholders gathered at the event and the professional profile of the participants was as follows: 36% technical, 28% management, 22% sales & marketing, 8% communication & public affairs, and 6% finance. Politicians and bureaucrats are not mentioned in this list, as they accounted for less than 6% of the participants.

4.3. Research design and methods of data collection

Conferences and exhibitions at trade fairs provide rich sources of data. Ponte (2014) recognizes conferences as a productive arena when conducting studies of renewable industries. He finds fieldwork at conferences cost-effective and considers conferences a relevant arena for investigating the institutional, regulatory, and governance features of a value chain.

The present study considers EWEA OFFSHORE 2013 as discursive arenas, of which both (1) the exhibition and (2) the conference, were relevant for investigation. The utility companies (to a less degree the wind turbine manufacturers) had a prominent position at the conference. Different offshore industries and hence key suppliers were represented at the exhibition. In these regards, the two arenas complemented each other as the relations between the lead firms (particularly utility companies) and the offshore suppliers are at the core of this study.

First, text was partly collected from the exhibitors' presentations published on the EWEA website. I visited the exhibition to study how they marketed their businesses. I collected brochure material and took photos at the stands of selected industrial branches. The collection of photos cover showcases of models of installation vessels (jack-up) and service vessels and exhibitors' posters. I analysed pictures, their elements and subtitles, to find subtexts. My data material includes leaflets from the stands of 18 companies, and my own photos of their exhibits, including posters, videos, and showcases. I investigate discursive practices related to conference presentations, and discussions, presentations, and marketing at the exhibition.

Second, I visited the conference. It had 1 plenary session and 20 thematic sessions organized under 3 main topics: market, strategies & planning; financing; future technologies; and industrializing the supply chain. The conference data of my study were collected from five sessions, selected particularly with regard to topics connected to the supply chain. As a conference delegate, I had access to recordings of the conference as podcasts accessible via EWEA's website. All the speeches were either video or audio recorded. The data material was also supported by presentation abstracts, a large number of PowerPoint presentations, a smaller number of papers, and my own

notes taken during discussions. My own transcriptions of 16 speeches, each lasting about 20 minutes, constituted my core empirical data from the conference.

The speakers were mostly CEOs and other managers. Their presentations drew more or less on academic discourses within engineering, business management and environmental policy. I excluded from my data material purely expert technology discourses, in favour of business management discourses. This seems to be a reasonable decision as half of the EWEA participants had positions in management or sales & marketing.

Among the invited speakers were seven representing utility companies (Danish, German, British and Spanish), two representing turbine manufacturers (Danish and German), four representing consultants (British and German), one representing a certification body (Norwegian), and one representing a recycling company (Danish). The speakers reflect the sectoral affiliation of the EWEA board members. The strong presence of the representatives from utility companies (even in sessions on suppliers and vessels) demonstrated their lead position also in the offshore wind value chain.

The speakers' messages were clearly directed towards politicians, policymakers and bureaucrats, but relatively few representatives of these groups were present at the conference. The communication on energy and renewables was rather mediated with the help of mass media. Hundreds of journalists attended EWEA OFFSHORE 2013. At the start of the event, a press conference was organized that helped EWEA to spread its messages to a wider audience in the public domain. The organization was subsequently quoted by a wide range of leading European newspapers. This public communication with a broader audience appears vital for a renewable energy sector, in which also non-economic actors as politicians, regulators and non-governmental organizations have a stake.

I was able to gain a first overview of the data material from statistics (word frequency counts). I used the software program Nvivo to assist an analysis starting with a search for keywords in order to sort out and find adequate codes. As the reduction of the material was theory-driven, I partly used codes given from theoretical concepts. I have sorted categories belonging to the domestic convention (history, tradition, repetition, trust, loyalty, customization) on the one hand, and categories belonging to the industrial conventions (future orientation, efficiency, cost reduction, industrialization, standardization, economies of scale) on the other hand. I added also categories belonging to the civic convention (environment, regulations, subsidy schemes, renewables, economic growth, job creation).

The transcripts were partly openly coded in order to cover concepts that appeared to be related to those above. Further analysis was based on combinations of codes in order to identify connections in the text – interrelations between categories, pointing at conditions, causality or arguments. These

are elements in my extraction of storylines. A storyline is a generative form of narrative and a common thread of discourse. The different constituents of the interpretative repertoire are interconnected through the storyline (Keller, 2013). Storylines appear to tell us what is true and false, and give reasons for progress. Construction of storylines is an important form of agency (Davies and Harré, 1990).

5. Analysis

5.1. Manufacturing domain vs maritime domain

The exhibition, with more than 400 exhibitors, was one arena for data collection. From the EWEA OFFSHORE 2013 website I was able to sort the listed exhibitors' presentations with regard to their industrial branch. The results of a simple text analysis indicate that industry branches operate in two contrasting worlds of production: For the 90 exhibitors in the maritime domain marketing was much about installation, logistics, construction and operation. For the 60 exhibitors within the manufacturing domain marketing was about products and services. They appear as suppliers to turbine manufacturers.

A comparison of the word frequency rates among presentations across the industrial categories revealed some basic industrial characteristics. The word 'project' appeared frequently among the presentations in the maritime domain, but very seldom among presentations in the manufacturing domain. By contrast, the word 'product' seldom appeared among the presentations in the maritime domain and much more frequently among the presentations in manufacturing domain. This finding reflects the project economy of the exhibitors in the maritime domain. The maritime and offshore O&G industries have traditionally 'one-off' production. This means that each unit of a product is unique and based on a specified design. In the manufacturing domain, however, similar units are produced in quantity. This latter category particularly applies to supplies for turbine manufacturers. The simple text analysis above indicates contrasting legacies and practices between the manufacturing domain and the maritime domain.

In the opening speech of the conference, the president of EWEA pointed at such contrasting traditions between the wind industry and the offshore industry:

Initially, I saw a clash of cultures between the wind business and the offshore businesses. The wind business, thought 'OK. We know how to build the wind farms. What was the problem?' And the offshore business in their very mature way: 'We can build anything! Anyway, at a price perhaps.' Well, we have now discovered that offshore wind farms are not just wind

farms that happen to be offshore, and that it is not offshore projects that happen to be wind farms – they are offshore wind. (President of EWEA)

On the one hand, he perceives a wind business aspiring to serve the offshore wind market, as well as the onshore wind market. A business that brings along their experiences from the more mature wind industry onshore which is considered relevant and adequate also for offshore wind market. On the other hand, he perceives an offshore business that relies on maritime traditions, experiences and assets, and a capability to customize their products. He hints to an industry that have been less focused on price reduction. He recognizes two industries coming from contrasting tradition bringing different references along into the quite new offshore wind value chain. In the conference setting, the EWEA president considered the clash of cultures as history. Even though, the two different cultures may still prevail and lead to tension and challenges for further collaboration. From the analyses of the exhibition and the conference below, we recognize a value chain, where different convention exists side by side (Ponte and Gibbon 2005).

Below the further analyses are separate for the offshore O&G and maritime industries which are suppliers in the deployment chain of the offshore wind industry chain on the one hand, and lead firms of the complete offshore wind chain, on the other hand.

5.2. Following the offshore and maritime industries at the exhibition

The following analysis is from the perspective of offshore O&G and maritime industries entering the offshore wind sector, such as suppliers of offshore foundations and related vessels. I examine how they presented themselves highlighting their customer relations, project experiences, and product and process qualities without going into the technical details of their presentations. Most of the products and services were installation vessels, service vessels (work boats) and foundations (monopoles, tripods, and jackets). The foundation suppliers and some of the vessel suppliers had customer references as well as project references, and some of the larger ones had long lists of such references. The lists indicate that contracts are based on tradition. The companies expressed their worth by referring to their previous customers (particularly utility companies) in the brochures. The references also show suppliers' pride in serving major clients. This positioning as a subordinate to the client expresses their commitment to perform in line with the tradition. A few companies also included recommendations made by project managers. By referring to their clients considerations, they demonstrate their ability to satisfy their customers. The majority of the companies also expressed their relevant experiences and competences by referring to previous offshore wind projects and track records in deeper waters far from offshore. They demonstrate both their tradition and their ability to adapt to new contexts.

By referring to their customer relations and track records, the companies demonstrated their proven technology as well as their relational assets. Clients trust in the supplier companies was evidently meant to be found in the knowledge suppliers have gained from operations in the field and with key customers. Repeated contracts with key customers over a longer period of time indicate the loyalty to respective clients. They refer to decades of experience of operating in their traditional domain of maritime sector and accumulation of know-how (ranging from 40 to 75 years). *'Over 40 years of experience – operating in the coastal marine sector'* (poster of a shipping company). They appear familiar with a sector, which has become their domain. In such a way they demonstrate that history matters.

Six companies explicitly mentioned that offshore experiences meant O&G experiences. *'.....operate a diversified fleet of modern and efficient vessels, servicing the global offshore oil and gas exploration, development and production industry worldwide'* (leaflet of a shipping company). They claim an ability to diversify to offshore wind from O&G market.

The majority of images were on industrial practices, showing offshore operations, as ongoing installations, taking place in the real world. Videos and pictures supported by written texts demonstrated experiences and competences relevant in a wind energy setting. They both show their unique assets and how familiar they find operations in their own domain. The marketing listed above is referring to history and trust-based relations to clients, is very much in line with domestic conventions. In contrast to the future orientation under the industrial convention, suppliers in the maritime domain rely on their traditions.

In their brochures, various exhibitors showed their ability to produce a wide assortment of products such as types of vessels and a range of foundations types. 16 companies referred to their ability to customize their products. *'We know our business and we are able to fabricate offshore foundation according to our clients' specifications'* (Leaflet of an international steel contractor). They express their willingness and capability to meet the particular and shifting demands of their clients. As a subordinate they show a sensibility to the client's requirements. The suppliers offered different foundations fitted to gradually more demanding physical environments *'...particularly suitable for larger turbines, deeper water and demanding soil conditions'* (leaflet of technology company offering design solutions for foundations). I recognise a storyline of 'customized specialization' demonstrating their capabilities in adapting to new conditions and customize products for the varying needs of users.

I notice that low prices were not part of the marketing strategies and cost reduction was rarely mentioned. Advantages of serial production were hard to find in the marketing of offshore

companies; in one brochure a Norwegian supplier of foundations reflected on how the manufacturing experiences with 'serial production' represented new challenges for the company. This way of organizing production appears as a break with their tradition. The tradition of the maritime suppliers is reflected in a discourse demonstrating familiarity to their traditional domain.

5.3. The EWEA conference as a discursive arena for lead firms

In this section I analyse the EWEA OFFSHORE 2013 conference as an arena of negotiations. The opening session addressed the political challenges ahead, both at EU level and at national levels. As EWEA leaders and core industrial actors sought legitimation, they relied on energy and environmental discourses. These speakers particularly referred to international climate commitments such as the European Union's 20-20-20 agenda, and there was a particular session on 'Is there life after 2020? Incentive policies in EU 2030 framework'. The forward-looking speakers demanded ambitious and definitive political commitments beyond 2020 by pointing at the long-term investments typical for offshore wind sector.

They referred to the multiple expectations from the political side. Speakers representing EWEA highlighted the environmental and job-creation role of the offshore wind sector, as they urged for continued public support. *'We have heard the political side saying now for some years: we need a carbon free future, we need jobs, we need export, we need economic activity and it has to be done in a sustainable way. Well I can tell you dear politicians: that's what wind is all about* (CEO of EWEA at opening session). This expression justify the renewable energy technology as environmentally sound. Pointing at common interests on wider socio-economic impacts the utterance also intend to mobilize alliances across political and industry sectors. The references to impacts on environment and society touch upon moral standards of solidarity and responsibility. As such this political discourse is in line with the civic convention.

The governing idea is to substitute environmentally damaging growth based on fossil fuels and nuclear energy with low-carbon growth based on renewables and combating global warming by engineering solutions and policy measures. Innovation and the development of low-carbon energy technologies are also considered as key sources of economic growth. This kind of modernization of the sector corresponds both to the industrial convention and the civic convention with regard to future orientation and believe in technology and policy instruments.

Key speakers repeatedly warned about the *'the biggest risk we are facing is the regulatory risk'* (EWEA president). It appeared as an existential problem for the industry, experiencing a fundamental uncertainty about the future framework, particularly on the future subsidy scheme in the UK and Germany. The idea that further investments require stable framework is in line with Keynesian

economics. They recognized energy and climate policies (including subsidy schemes) as the key drivers for the development of the wind industry. As such, I see the formation and maintenance of a regulative framework including subsidy schemes, as part of dispositif. Key speakers acknowledged that explicit targets have provided the industry with certainty for planning towards the end of the decade, and called for continued stable frameworks, as these allow higher volumes and will enable the industry to gain economies of scale. Their concern for industry outlook and measures for ensuring industrial growth is about extending the present into the future. Creating of predictable universe corresponds with the future orientation of the industrial convention and touches the civic convention as well.

Cutting costs was considered as the paramount job ahead for offshore wind sector. It was a core topic across the sessions studied and the subject was even reflected in the title of one session. The speakers referred to the public discussion on energy prices and the challenge that new renewable energy sectors face with regard to high costs. The heavy focus on effectiveness and productivity is in line with the industrial convention. As they admitted that the production of offshore wind energy is still dependent on subsidies, they recognized both governments and industry are committed to reduce new renewable energy prices. *'...we must reduce costs, simply to retain their support with us'*. (Representative from a utility company). Even though subsidy schemes were considered as temporary measures, and to be gradually phased out, they appeal to governments for political support for an extended period in order to cut costs. The wind industry representatives recognized exposure to market mechanisms, but also exposure to political pressure for cost reductions. Speakers insisted on willingness and capability of their industry to reduce costs. To put cost reductions on the conference agenda is thus reasonable for the legitimation of the industry and its energy technology. Cost reduction was presented as the key measure in preparing industry for the future.

The topic 'Industrializing the supply chain' was a track across three sessions. The governing idea is that economies of scale will bring costs down. Conference speakers pointed to interdependent factors to achieve this goal: large-scale deployment requires political confidence and stable frameworks, including subsidy schemes. Large-scale deployment will reduce costs and result in political confidence, which in turn will secure economic support and ultimately attract investments. *'So it needs large scale deployment, and large scale deployment, needs political confidence'* (EWEA president at the opening session). The circle of reasoning emphasizes the significance of mutually reinforcing mechanisms. This makes a storyline of industrialization, by political support, cost cutting and economies of scale. By their expressions, key speakers explain how to industrialize the offshore wind value chain. *'... we will drive scale and leverage, to reduce the cost of energy ...'* (Representative

from a utility company). This reasoning connects the cause and the effects of cost reduction. Ultimately, they explain how interconnected factors contribute to the maturing process of an industry. This idea of moving from stages of emergence and growth to a stage of maturity is basically in line with the concept of industry life cycles (Utterback and Abernathy 1975; Utterback and Suarez, 1993).

The managers from the utility companies recognized that the immature offshore wind sector lacks standards, particularly international standards that could help industrialize the whole supply chain and achieve serial production and reduce costs. This argument is very much in line with the industrial convention. A storyline of 'industrialization by standardization' appears as a demand for change in offshore wind sector, brought forward by key utility companies which are directly exposed to energy price competition.

They were able to draw on expert discourses in order to legitimate 'industrialization by standardization'. More precisely, they relied on an analysis by an invited engineering consultancy together with an advisory firm, suggesting standardization as one of the key areas for greater cost efficiency in upcoming projects for offshore wind power in Germany (Prognos and Fichtner, 2013): *'There are no broad technology standards in the whole industry in place today and we definitely need that to this point to get something like industrialization of the whole industry, to get serial production and to have the opportunity to learn from what we have done before'*. By this expression, the experts made it clear that the present industry is immature and suggests standardization as means for maturing the industry. As such, standards should work as a core part of dispositif – a measure to let this project materialize. The major utility company, Dong Energy, appeared as the main proponent, as it had taken action to fill the gap of standardization, particularly in services. A company manager invited suppliers and policy-makers to collaborate on standard developments, arguing that peers, including competitors, should join forces in this regard.

I interpret, however, the introduction of standards as an effort to impose an industrial convention known from the manufacturing chain, on the deployment chain. The conference organizers appear to devaluate experiences and competences of the offshore and maritime industries, as representatives were not included as speakers or discussants in the programme. At the conference the latter were either silent or absent, giving priority to the exhibition, networking, attending other meetings, or doing business. Power relations are evident as the utility companies and turbine manufacturers have a superior position both as organizers and speakers at the conference, and as lead firms of the respective value chains.

Most of the speakers agreed that operating in increasingly rougher environments demanded innovations. Future developments in gradually deeper waters will make it necessary to successively substitute types of foundations, from monopiles, via jackets, to floating structures. Some of these speakers highlighted the need for coordination, mutual learning, and co-development along the value chain, arguing that the respective designs of turbines, foundations and vessels should be well adapted to one another.

Whereas utility companies' representatives predominantly emphasized 'industrialization by standardization', the turbine manufacturers' representatives drew on related discourses: *'....the innovation and the strategic alliances is together with the industrialization the three main topics that we have to focus on in Siemens, to make us competitive to conventional energy, without any subsidies'* (Representative from Siemens). The turbine producers' representatives demonstrated how their companies contributed to more efficient energy production by introducing new turbine models with longer rotor blades, increased capacities and longer life time. As such, turbine manufacturers promoted technological innovations for an enhanced efficiency. Their governing idea of increasing scale in order to achieve cost effectiveness corresponds with the industrial convention.

6. Discussing co-existing conventions and conflicting discourses

At the conference speakers representing lead firms integrated elements from both the industrial and the civil convention into an overall storyline. The chain of reasoning can be expressed as follows: stable framework → standardization → serial production → cost reduction → legitimization. This storyline is actually a circle of reasoning, pointing at interdependent measures. The storyline reflects a vision of how a mature industry would look like, and how to come there. The storyline of 'industrialization by standardization' corresponds with the industrial convention typical for the manufacturing domain and the more mature wind sector onshore.

'Industrialization by standardization' brought forward by the representatives of lead firms, seems to break with the domestic convention prevailing in the offshore O&G and maritime industries. The latter industries find evidence of quality in their business history, their trust-based relationships to their clients and their capability to customize their products. I recognize a tension between forward looking conventions found in lead firm strategies and traditional conventions prevailing in the maritime domain. The suggestion by the speakers from lead firms was actually to introduce new forms of governance of the value chain by enforcing an industrial convention over a domestic

convention. I interpret this idea as a transfer of the industrial convention known from the manufacturing part of the value chain, to the deployment part of the value chain.

Introducing standards has implications for the value chain. Standardisation defines terms of value chain membership and may lead to incorporation, exclusion or marginalization (Ponte and Gibbon, 2005). Lead firms expect suppliers to comply with standards as compliance give suppliers and subcontractors access to the value chain lead firms govern. In tendering processes lead firms may ask for codified data, in the form of documents referring to standards. Basically the suppliers demonstrate willingness and ability to meet the needs of their clients. But new standards do not automatically lead to change of conduct among the suppliers (Gibbon and Ponte, 2008). Dependent on their industrial legacy, suppliers may find standards as a barrier for entering and operating in the offshore wind market. Whether utilities' efforts to standardize and industrialize the value chain is followed by greater obedience among suppliers, is still an open question.

7. Conclusion

This paper has theoretical, methodological and empirical contributions:

I) Theoretically the paper offers a new approach to Global Value Chain analysis. In regards to the GVC literature, the paper goes beyond the strand of 'governance as driving' and beyond the strand of 'governance as linking'. It is rather inspired by 'governance as normalizing'. Distinctive conventions are applied in the analysis that also explores the discursive dimension that frames the relations between actors in the value chain. Actors' particular storylines recognized in the empirical analysis are connected to respective conventions. The discourse approach helps us explain how conventions are able to travel along and between value chains. In this connection are standards key means promoted by lead firms, which may work as dispositif. In this way the paper is able to introduce a new perspective on power relations to GVC analysis. The study points at the intermediating role standards have between industrial practice and discourses. A discourse perspective appears as an alternative, relevant and promising approach for future studies of value chain formations and governance. More thorough conceptualization of the relations between discourses and conventions, remains. A related subject for further theoretical elaborations is the link between standards and broader economic and environmental discourses.

II) Methodically this discourse approach to the event – EWEA OFFSHORE 2013 – contributes to the literature on temporary clusters and field configuring events, by suggesting another approach than the typical ones. Events appear as significant arenas for core actors negotiating industry formation.

As they are discursive arenas bounded in time and space, they are convenient for data gathering for text analysis. As such, I find discourse approach to events as a relevant approach within the sub-discipline of economic geography. Whereas Henn and Bathelt (2015) find it impossible to determine the field configuring effects of events *ex ante*, this paper argue that the effects of events still may be discussed *ex ante* by focusing on the new measures negotiated at the events.

Differently from the study of business conferences by Henn and Bathelt (2015) I will not deny the field configuring potential of events such as EWEA OFFSHORE 2013. Still I realize that a single event is just one among further discursive arenas that may help configure organizational fields. Studies may thus benefit from including successive events and cyclical clusters (Power and Jansson, 2008).

Intertextuality across events means that certain discursive practices reflect wider discursive practices. I find this methodology particularly relevant for analysing new renewable energy industries as such sectors emerge and develops in the interface between policy and business discourses.

III) Empirically the paper contributes to GVC studies on renewable energy value chains in their immature phase. The formation of such value chains, as that of offshore wind energy, relies on political frameworks, but is, at the same time, under market pressure. The paper finds that the value chain is legitimized through its capabilities and efforts to produce renewable energy at prices competitive with those of other energy technologies. Representatives from the offshore wind industry recognized how regulations and subsidy regimes have created its growth, and is aware of the regulatory risk in future subsidy schemes of key European states.

The paper points at challenges facing immature value chains, integrating different industry sectors bringing their particular legacies and conventions along. In the offshore wind value chain, onshore wind industries are coupled with offshore O&G and maritime industries. The offshore wind sector is typically conceptualized as a wind industry in literature and was similarly understood at the conference. Its need for offshore and maritime supplies is recognized, but this is subordinate to the former conceptualization. By dominating the conference program, utility companies demonstrated their position as the legitimate speakers of the offshore wind value chain in which they also are lead firms. This finding is in line with Foucault, who maintains that power and discourse are mutually constitutive (Keller, 2013). The study of EWEA Offshore 2013 illustrates how lead firms are framing the industrialization of their value chain.

The practical implications for the value chain are, however, open and subject for future research. Even if the conventions the different industries relies on, are contrasting, these industries may complement each other in the value chain. The offshore suppliers could provide the value chain with flexibility in the short run in its immature phase, while the lead firms prepare long-term performance

as a mature value chain. Future research on standardization should pay more attention to the role of national, European and wider international standard setting bodies and how they interact with industry and states. Further research on renewable energy sectors should also focus on the recent introduction of competitive auctions by states, in order to bring costs down.

Epilogue

Three year after the EWEA event in Frankfurt a milestone for international commercialization of offshore wind industry appears. In 2016 have leading countries turned their regulatory regime into predictable tendering procedure including competitive auctions for offshore wind projects. The responses were record low bids. Denmark, Netherlands and Germany awarded licenses for building offshore wind parks to project developers setting a new standard for cost level. The costs are pushed down to a level that make offshore wind energy price competitive to those of other energy technologies. In Germany, Dong won what is likely to be the worlds' first subsidy-free offshore wind project. A news article by WindEurope gives us an explanation of *'How have costs come down? Collaboration with the industry, supportive government schemes and economies of scale have been instrumental in helping to reduce the cost of offshore wind'* (WindEurope, 2016). The offshore wind capacity in European waters was nearly doubled during the period 2013-2016 (EWEA, 2014; WindEurope, 2017). Since the turn of the century the growth has been exponential.

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