

Supporting social acceptance of offshore wind energy by means of an exhibition

An examination of the potential of 'Fascination Offshore' as an instrumental information provision to support social acceptance of offshore wind energy in Germany

Master Thesis

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Statement in Lieu of an Oath

I hereby confirm that I have written this thesis on my own and that I have not used any other sources or materials than the ones referred to in this thesis.

Oldenburg, 28 January 2015

A handwritten signature in blue ink that reads "Ann-Christin Engelschalk". The signature is written in a cursive style.

Ann-Christin Engelschalk

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Ann-Christin Engelschalk

Abstract

Accompanied by the *Energiewende*, the German energy landscape experienced a distinct shift, not only in terms of policy or legislation, but also in the social sphere. In order to enhance the social acceptance of the comparably young offshore wind energy sector, the German Offshore Wind Energy Foundation initiated the exhibition 'Fascination Offshore' as an information-providing tool. This study is concerned with the examination of the potential of 'Fascination Offshore' for supporting social acceptance of offshore wind energy in Germany. First, the exhibition concept is analyzed and a desk research is conducted, based on planning literature on social acceptance of renewables. Then, by performing empirical research, quantitative and qualitative data is gathered on the public perception of the exhibition. On the basis of these data sources, a comprehensive framework is created for addressing the research objective. This framework is further supplemented by the approaches of information rich aggregation, the participation ladder model and the contemporary planning spectrum. They allow for systematically assessing the available data. From the conducted desk and field research it is concluded that an optimal communication of the provided information to the public does not yet take place in the exhibition 'Fascination Offshore'. Hence the exhibition concept can be concluded to contain room for improvement. In order to overcome detected obstacles, recommendations are formulated for the Foundation to approach the identified weaknesses.

Key words: offshore wind energy, social acceptance, participation, exhibition, information provision, spatial planning, evaluation, contemporary planning spectrum, information rich aggregation, ladder of participation

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List of Abbreviations

BMU	Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit <i>Federal Ministry for the Environment, Nature Conservation and Nuclear Safety</i>
BMWi	Bundesministerium für Wirtschaft und Technologie <i>Federal Ministry of Economics and Technology</i>
BSH	Bundesamt für Seeschifffahrt und Hydrographie <i>Federal Maritime and Hydrographic Agency</i>
EEG	Erneuerbare-Energien Gesetz <i>Renewable Energies Act</i>
EU	<i>European Union</i>
EWEA	<i>European Wind Energy Association</i>
IP	<i>Interview Partner</i>
IRA	<i>information rich aggregation</i>
MCA	<i>maximum credible accident</i>
NABU	Naturschutzbund Deutschland e.V. <i>Nature and Biodiversity Conservation Union</i>
NIMBY	<i>Not In My Backyard</i>

1 Introduction

The significance of social acceptance of offshore wind energy reveals in the light of its multiple tendencies. A strong variety of such acceptance on the part of the public already comes into existence when merely considering the Federal Republic of Germany. As for instance press releases demonstrate, different locations of offshore wind projects can go along with various facets in terms of acceptance. This impression can exemplarily be grounded with the comparison of two newspaper articles. The press release from the OSTSEEZEITUNG (2014) gives an insight into the worries of the local tourist business concerning offshore wind energy in the Baltic Sea. Reporting about the fears of a tourist association of Mecklenburg-Western Pomerania, the newspaper writes:

‘Tourists could stay away, if wind turbines disturb the landscape [...]’

(OSTSEEZEITUNG 2014; translation: AE)

On the other hand, the HAMBURGER ABENDBLATT (2013) tells about the potential of offshore wind farm tourism in the North Sea. The offshore wind farm ‘Meerwind Süd/Ost’ is intended to be the destination for boat trips that are planned to be offered to the public regularly. The test run is described by the director of tourism as:

‘The first excursion was a great success’

(HAMBURGER ABENDBLATT 2013; translation: AE)

Those two examples can give an idea of the influence, which media has in reporting for instance about the different touristic aspects of offshore wind constructions. Both positive and negative impacts can be highlighted by such means. Both exemplified directions demonstrate a strong role accounting for how the media is able to frame social acceptance. As a result, it becomes difficult to actually portray social acceptance in the face of offshore wind energy. This is because the German territorial waters in both the North and Baltic Sea offer ‘enormous wind resource’ offshore (GASCH, TWELE 2012: 520). On the contrary, however, the press releases revealed that the acceptance of using those potentials may diverge widely in the public.

Potential negative perception of planning projects for German offshore wind energy has amongst others been recognized by the so-called Stiftung OFFSHORE-WINDENERGIE (German Offshore Wind Energy Foundation, hereafter: Foundation). As the initiator of this thesis, the research objective is introduced after a short presentation of the Foundation itself.

‘The German Offshore Wind Energy Foundation (GOWEF) was created in 2005 as ‘Foundation of the German Industry for the Use and Research of Wind Energy on the Sea’, initiated by the Ministry of Environment, and supported by the respective coastal states (Bundesländer) in northern Germany, as well as industry partners who have been active in the offshore wind energy sector. The main idea behind the establishment of the Foundation was to have an independent institution which supports the expansion of offshore wind energy in Germany, bundling various interests and acting as a unified voice to speak with politicians, the public, business and the scientific community. The statutory purpose of the Foundation is the promotion of a sustainable and environmentally-friendly energy supply by increased use of offshore wind energy.’

The Foundation's Key Goals and Objectives:

Voice for offshore wind energy

Communication platform for actors from politics, business and research to improve framework conditions and to exchange knowledge

Public relations and mediation to overcome obstacles

Support public acceptance

Initiate and contribute to technological research and development'

(STIFTUNG OFFSHORE WINDENERGIE 2009: 6)

The motivation for this study is the researcher's master program 'water and coastal management' as well as her project assistant job at the Foundation. The project assistance allows for the specific focus on offshore wind energy in the present thesis. This rather broad subject of offshore wind energy comprises two particularly conspicuous characteristics. On the one hand the offshore wind energy sector can be characterized as a constantly growing industrial branch. That is, its importance is likely to further increase on the national as well as the international level within the next years (EWEA 2014: 10). On the other hand offshore wind energy displays a comparably young energy generating sector. Continuous improvement in all phases of a particular offshore wind farm is therefore likely. Also it displays an inevitably necessary condition for the long-term success of offshore wind energy. This statement accounts for all steps within the chain, ranging from planning, production, erection and operation up to deconstruction at a later point of time (cf. GASCH, TWELE 2012). Consequently it is reasonable that research at this point is still a necessary driving force for the development of offshore wind energy. It represents an essential prerequisite in aiming to constantly enhance offshore technologies, management styles and integrative approaches among further aspects.

The geographical background of the researcher allows for an interdisciplinary focus on the research gap of the topic that was initially introduced above. That is, one of the currently existing research gaps in the offshore branch concerns the importance of social acceptance in offshore wind planning projects. As it reveals from the press releases outlined before, social acceptance appears to be partially influenced by topographical characteristics. Researchers such as WOLSINK already investigated in this direction. However, their studies can be characterized as being beneficial for this thesis rather than actually answering the objective of this research. WOLSINK for instance restricts his investigations to the Netherlands. The thesis at hand yet targets at investigating the realm of social acceptance of offshore wind energy planning projects in Germany.

Theoretical considerations such as gained from WOLSINK still form the initial knowledge basis of the present research. The following constraint however needs to be emphasized in this connection. The present desk research mainly targets at illuminating parameters, which potentially affect social acceptance of offshore wind energy. Nevertheless it is difficult to grasp the total amount of these attributes. The desk research therefore does not aim at reviewing the full range of existing scientific discussions on the topic in detail. It is rather aimed at contributing to an understanding of the variety that influential factors on social acceptance can take in the present research content. The empirical research of the present thesis is based on a selection of potentially influential attributes. By establishing a connection between the specialist literature and particular empirical

research, this study aims at contributing to the existing research on social acceptance of offshore wind energy by giving attention to a direction, which has not yet been investigated. The research objective of this thesis is formulated after a first introduction to the exhibition concept under investigation.

The research at hand is done in accordance with and under the guidance of the Foundation. Its direction select specifies the tool, which is investigated in this study. As one of its goals the Foundation aims at the 'support of public acceptance' (STIFTUNG OFFSHORE WINDENERGIE 2009: 6). The current exhibition of the Foundation is an instrument, which seems to support especially this objective. The name of the exhibition is 'Wanderausstellung "Faszination Offshore" – Wind vom Meer für neue Energie in Stadt und Land' (touring exhibition 'Fascination Offshore' – wind from the sea for new energy in the city and countryside; translation, AE). In the project assistant job, the researcher especially deals with the evaluation phase of this particular exhibition. The internal specialization within the overall exhibition project work offers the following opportunity to the researcher. From an evaluative perspective, the researcher can investigate the extent to which the exhibition 'Fascination Offshore' represents a valuable instrument for supporting social acceptance of offshore wind energy in Germany. The concrete research objective of this thesis is consequently formulated as the investigation of the potential of 'Fascination Offshore' to support social acceptance of offshore wind energy in Germany. The main research question can accordingly be verbalized as:

Does the exhibition 'Fascination Offshore' display an instrumental information provision for supporting social acceptance of offshore wind energy in Germany or an ineffective attempt to overcome offshore obstacles?

In this context, three sub-questions are furthermore formulated. They help approaching the main research question by addressing the main sub-characteristics of the research question in a more explicit way each. Later within the research process, their particular findings are merged in order to approach the main research question on the basis of the knowledge gained from the sub-questions. The sub-questions are formulated as:

Sub-Question 1:

Which factors have an influence on the social acceptance of offshore wind energy in Germany?

Sub-Question 2:

Under which conditions can a provision of information as executed in the case of the exhibition 'Fascination Offshore' help to support social acceptance of offshore wind energy in Germany?

Sub-Question 3:

Which advantages and which disadvantages does the format of the present exhibition of the Foundation have for supporting social acceptance of offshore wind energy in Germany?

2 Desk research

2.1 Framing the German offshore wind energy sector

2.1.1 Expansion targets

As a consequence of the ultimate maximum credible accident (MCA), which happened at the Fukushima Daiichi nuclear power plant in March 2011, the German government was the first to take appropriate actions for its federal energy policy (cf. STERN 2011). The so-called *Energiewende* (energy transition) can thus to some extent be attributed to the resulting activities of the German federal government concerning the MCA in Japan. An additional driving force within the German turnaround was distinguished by HENNING and PALZER (2013). It is described as the massive lowering of the greenhouse gas emissions (cf. HENNING, PALZER 2013: 8). The long-term political aim in this respect is formulated as a reduction of the emissions by at least 80% compared to the 1990 level. Until the year 2020, 40% lowering is striven for (ibid.: 8). Notwithstanding this target, Germany decided on its national nuclear phase-out by the year 2022 (BUNDESREGIERUNG 2014). Again it is underlined that this decision displays a direct consequence of the nuclear catastrophe in Japan in 2011.

The decision for a total nuclear power phase-out immediately revealed that the losses of energy production caused by the shutdown of the existing nuclear power plants needs to be compensated by other energy generating sources. Due to their potential to generate energy in an environmentally-sound manner, renewables are regarded as trend-setting by common consent. In this regard they contrast other conventional energy generating sources. The legally binding goals for renewable energy generation in Germany are described in the *Erneuerbare-Energien-Gesetz* (Renewable Energies Act; hereafter: *EEG*). Through this, the national targets account for 18% total share of renewable energy generation by 2020 latest and at least 80% by 2050 (BGBL. I 2014: § 1 (2), (3)). Those German renewable targets at the same time also serve international requirements, which are formulated on the European scale. On the European level, a 20% overall energy share generated from renewables is prescribed by 2020 (COMMISSION OF THE EUROPEAN COMMUNITIES 2008). In order to fulfill those set targets, every member state of the EU is required to contribute to this common goal (EC 2009).

Zooming in to the federal renewable targets of Germany again, the following statement can be made with reference to the nationally utilized renewable sources. The German offshore wind energy sector reveals to display one important pillar of the national *Energiewende* target. That is, in order to be able to compensate the disestablished atomic energy supply, expansion targets were not only defined for the renewables sector as a whole. Rather, a share was prescribed for each branch of the utilized renewables. Taking into account the most recent adoption of the *EEG* (BGBL. I 2014), offshore wind energy is required to install a total capacity of 6,500MW by the year 2020 (cf. e.g. BMWI 2014; DEUTSCHE WINDGUARD 2014: 2).

The given overview served as an insight into background motives of the German Republic to increase its renewable shares. Also, it introduced future targets of renewables in general and offshore wind energy in particular. The following passage builds upon this understanding. It discusses advantages and shortcomings of wind energy. Also it outlines the need to utilize offshore wind energy for meeting the expansion targets.

2.1.2 Offshore wind energy's position in the prospective energy mix

Out of the available range of environmentally-sound energy generating forms, offshore wind power represents one possibility to partially replace nowadays large-scale nuclear power plants. This is because offshore wind power plants comprise three significant advantages. First, Germany as much as Denmark or the Netherlands represents a country which – on the long-term perspective – is limited in onshore space available for erecting wind power plants (cf. e.g. HAU 2008: 679; LADENBURG 2008: 111). Even by repowering old plants, sites on German territories are limited in their availability. Besides a mere geographical factor limiting the exploitation of the wind resource, this is also due to Germany's legal system. Restrictions or requirements for choosing appropriate sites for wind extraction exist on national as well as regional scales (cf. e.g. HANDELSBLATT 2011).

The second argument that favours offshore wind energy refers to the wind speed. As the wind speed is comparably higher offshore than onshore (cf. HAU 2008: 510, Figure 13.3), offshore wind power plants obtain more full-load hours per year. While at an average onshore site about 1,500 to 1,800 full-load hours are reached, offshore plants can operate up to almost 4,500 hours (WINDMONITOR n.d.). Also in comparison to photovoltaic with about 970 full-load hours in Germany in 2012 for instance, offshore wind energy generates an output of up to 3,500 more full-load hours (FRAUNHOFER ISE 2014: 43; WINDMONITOR n.d.).

The third argument that can be brought forward concerns the tendency to grow (HAU 2008: 679). As argued by HAU, several aspects come together and result in an ongoing trend for bigger and bigger plants planned and erected offshore. Foreseeing this trend, the author already states in 2008 that offshore wind energy will be dominated by the main energy providers, who have the required financial capacities (HAU 2008: 679). This statement is reinforced by the EUROPEAN WIND ENERGY ASSOCIATION (EWEA 2013a: 23).

In the face of the three arguments brought forward, it appears that offshore wind energy generation contains a huge potential to contribute to the prescribed renewable share targets on both the EU and the German level. But this viewpoint would be rather fragmented if not taking potential risks and disadvantages of operating offshore wind technology into consideration as well. Therefore, in contrast to the first two points of the preceded argumentation, it must at the same time be stressed that an offshore operation site also implies challenges. Such difficulties already appear with the regular preconditions dominating off the coast. This may be in terms of water depth, weather conditions, wave height or material's corrosion due to the water's salinity for instance (cf. e.g. FRAUNHOFER ISE 2013: 21). Also the distance from the coast must be named as an obstacle in terms of accessing offshore wind farms. With the growing trend of erecting wind power plants further off the coast for reasons of appropriate space available, reachability becomes more difficult. That is, while the offshore full-load hours surpass the onshore full-load hours by far, they on the other hand also have a higher failure rate. Due to easier accessibility of an onshore plant, its maintenance is less limited in case of technical difficulties (cf. IZP ET AL. 2009: 8). It neither requires boats or helicopters for accessing the site, nor is an onshore access that dependent on weather conditions. Onshore wind power plants' failures can be fixed faster than defects occurring at offshore sites. For means of illustration it can be pointed at IZP ET AL. (2009). In their study the failure rate of several international offshore wind farms is compared. As Figure 1 visualizes, the offshore wind farms are sorted by the date they started operating and colored by their rated output. It can be

seen that the elder wind farms are equipped with comparably small turbines. They are positioned closer to the coast line and range within the full-load hours of onshore wind power plants. Also it can be concluded from the figure that the younger farms notably decreased in their full-load hours currently (IZP ET AL. 2009: 9).

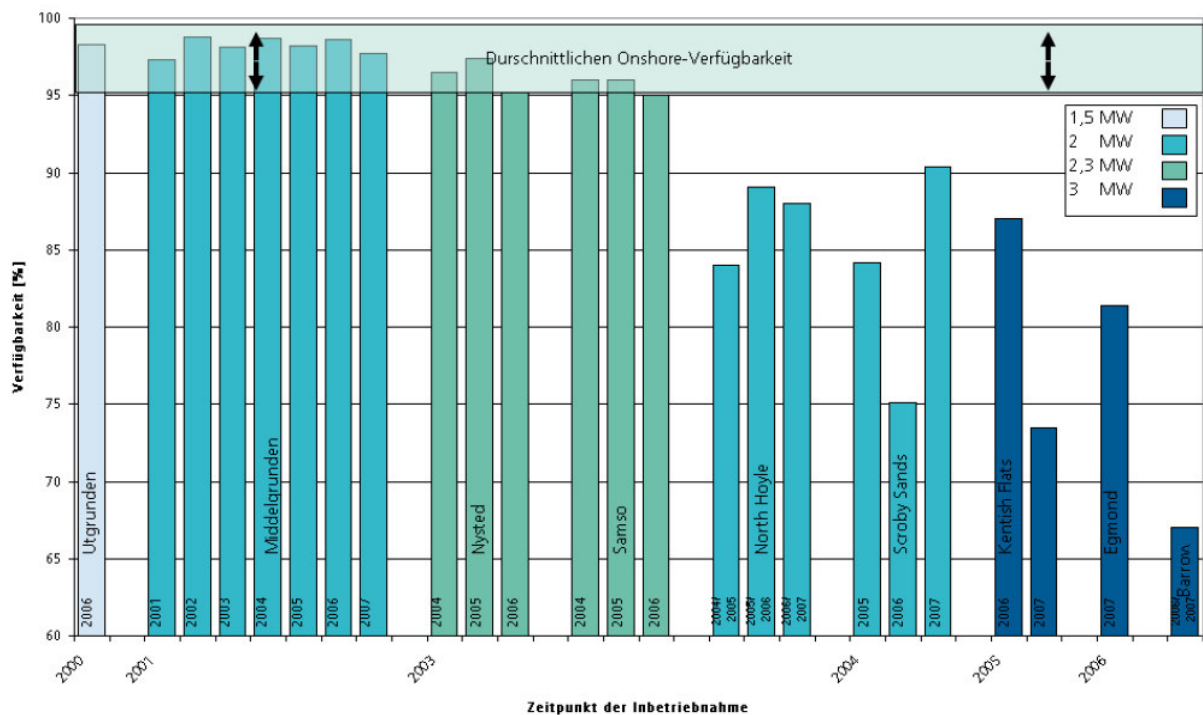


Figure 1: Overview - technical availability of offshore wind farms

(Source: IZP ET. AL. 2009: 8, Figure 2)

Despite the fact that offshore wind energy is not yet as reliable as its onshore equivalent, the pressure of the German society to get rid of nuclear energy necessitates ongoing activity especially in the renewables sector. That is because apart from nuclear power plants, coal- and gas-fired power stations still secure Germany's current energy demand in the first place. It can however be extrapolated from the so-called 'Climate and Energy Package' that coal and gas are not compatible with the specified EU goals in the long run (COMMISSION OF THE EUROPEAN COMMUNITIES 2008). This is because in accomplishing the set target of reducing the greenhouse gas emissions, conventional energy generating forms do not represent the European Union's energy future. Therefore, the solution for the greenhouse gas emission problem can rather be found in the increased expansion of the renewables' potential. Returning to the offshore wind technology it can be stated that no CO₂ emission takes place during its operation phase. This big advantage displays a representative benefit, which all renewables contain in contrast to conventional fossil fuels.

Still it needs to be emphasized that the increasing expansion of the renewables in general and offshore wind energy in particular are tied to additional costs. In the search for appropriate sites for erecting offshore wind farms for example, several restrictions and regulations need to be considered. That is, territories permitted for construction for the sake of shipping lanes, nature protection or military drill grounds among others are predefined for the German exclusive economic zone (e.g. BGBl. I 2009). Those constraints result in progressively growing distances off the coast. Moreover, offshore wind energy represents a young industrial branch. Its particular life cycle stages therefore draw from comparably more financial resources than

experienced energy generating sectors (cf. FRAUNHOFER ISE 2013: 21). Here the *EEG* also regulates the specific compensation rates for German offshore wind farms (BGBL. I 2014: § 30). By using the so-called reallocation charge, additional financial expenses are transferred to the end-consumer. In this connection it can once more be pointed at the media as a means for spreading skepticism. Constantly articles can be found in German newspapers, which question the justification of comparably higher prices of offshore wind technology or even communicate bias (cf. e.g. FOKUS 2012; SZ 2013; FRANKFURTER RUNDSCHAU 2013).

However, lessons can be learned from the operation of coal- or gas-fired power stations in terms of appendant risks (cf. e.g. WAZ 2012). This brings the discussion to yet another level, namely the consideration of social costs and external effects (cf. EC 2014: 12). That is, on the one hand some renewable energy sources currently require higher financial expenditures than conventional power plants. Nevertheless, the confrontation of conventional and renewable energy also unavoidably leads to pointing at the negative effects of operating nuclear power stations among others. In the light of continuous risks and environmental pollution accompanying conventional power plants, external costs continuously need to be a subject of discussion. This is necessary since in the past they have not been 'encompassed by the regular market mechanism' (CRABBÉ, LEROY 2008: 101). However, a shift in public thinking can be ascertained, as it is expressed by JARASS ET AL. (2009). They argue that the long-term external effects of renewable energy generating sources are already gradually taken into consideration for determining their market price. Only by these means, the renewable energies become compatible in the face of conventional energy sources after all (cf. JARASS ET AL. 2009: 95). In addition to that, even more critical remarks exist in the public debate. It is for instance given warning of further dangerous underestimation of social costs accompanying the operation of conventional power stations. One such remark can be quoted from a staff member of the Institute of Labor and Economics in Bremen that:

'In today's electricity prices, the social costs are not covered anywhere near the utilization of nuclear power plants. Studies show the significant lower social costs of alternative energy in comparison to nuclear power. This is especially true for the energy sources wind and water.'

(HICKEL 2011; translation: AE)

Such considerations do however not solely represent concerns restricted to Germany. The *NEUE ZÜRCHER ZEITUNG* (2011) is one international example, which expresses discomfort with the Swiss system of externalizing risks of nuclear power plants. In this connection it is stated that:

'More nuclear energy is used than it would economically be reasonable taking into account all costs.'

(*NEUE ZÜRCHER ZEITUNG*, 2011; translation: AE)

In the light of the arguments brought forward on external effects and social costs, using offshore wind technology appears reasonable in the long-run. However, practice proved different for reasons of diverse kinds. It may be due to changing legal and political conditions that cause insecurity for both consumers and investors (EWEA 2013b: 40). It may also be due to the weak profile of the external effects, since they can be diffuse or invisible for instance (ZUIDEMA 2013, chapter 3: 49). As the quoted literature points out exemplarily, a whole

range of apparent counterarguments for offshore wind energy exists. They demonstrate disadvantages and risks incident to this young technology.

In the face of the legal EU requirements and particularly the *Energiewende* in Germany, it however becomes all the more important to emphasize the advantages that offshore wind energy comprises. Also, as the additional costs of the offshore technology in Germany are financed by the public via the *EEG* reallocation charge, the more needful it appears to undertake explanatory work on the offshore wind topic in order to foster its social acceptance. In this connection the exhibition 'Fascination Offshore' is introduced in the following as a tool of the Foundation, which aims at supporting social acceptance of offshore wind energy in Germany. Afterwards, it is elaborated on the phenomenon of social acceptance, its connection to offshore wind energy planning projects and the role of information as a frame to these considerations. Also the afore-mentioned arguments for opposing and supporting offshore wind power are illuminated from theoretical perspectives.

2.2 Introducing 'Fascination Offshore'

In order to enhance the understanding of offshore wind energy, its benefits as much as the options it offers, the German Offshore Wind Energy Foundation with former financial support of the BMU and current support of the BMWi initiated two exhibitions on offshore wind energy so far. The first exhibition was planned in 2008 and toured in the summer periods between 2009 and 2011. It was designed as a floating concept on board of the museum ship 'MS Greundiek' (cf. Appendix (7.2)). On an exhibition area of approximately 300 m², visitors were able to experience different aspects concerning offshore wind energy (STIFTUNG OFFSHORE WINDENERGIE n.d.a). Its overall concept was characterized as being determined by the ship's capacities to exhibit. That for instance means that large-scale exhibition pieces such as rotor blades could not be taken into account due to the given restrictions. Rather, the exhibition featured audio-visual presentations, smaller exhibition pieces, models of wind turbines and special ships for the erection, a touch-screen terminal including a quiz and a feedback-survey as well as information on job descriptions in the offshore wind branch (STIFTUNG OFFSHORE WINDENERGIE 2011; Figure 2).



Figure 2: Fascination Offshore - previous exhibition

(Source: STIFTUNG OFFSHORE WINDENERGIE 2011)

Due to the success of the former exhibition 'Faszination Offshore – Wind vom Meer für saubere Energie' (Fascination Offshore – Wind from the sea for clean energy; translation: AE), a follow-up project was initiated.

Called 'Faszination Offshore – Wind vom Meer für neue Energie in Stadt und Land' (Hereafter: 'Fascination Offshore'), the currently running exhibition was designed for the set-up at German onshore locations. The conception phase of this project started in June 2012. By April 2013 the exhibition started touring through Germany and comes to an end in late 2014 (STIFTUNG OFFSHORE WINDENERGIE n.d.b). Since it was designed as a follow-up exhibition of the former one, its concept is in large parts based on the previous exhibition. Consequently, already in the planning phase its determined focus was rather specified than flexible as regards content and samples. Bearing in mind those prerequisites, the current exhibition forms a lighter and more mobile version of the former floating exhibition (cf. Appendix (7.2)). It features 13 displays with different thematic foci such as the influence of offshore wind farms on the environment or the dimensions of a wind turbine (cf. Figure 3). It furthermore has a touch-screen terminal with an interactive menu available, guiding the visitor through the offshore-related topics. The info terminal moreover features a wind park builder. Additionally, two short films are presented on a flat screen. One of them gives a general introduction on the subject of offshore wind technology. The other focuses on occupational fields, which exist along the whole production chain of the offshore wind energy sector. Moreover the exhibition offers anonymous feedback possibilities by means of questionnaires on paper. Also, small exhibits are at display at some of the tour locations. Such can be named as cable intersections or screws as they are used offshore.



Figure 3: Displays of the exhibition 'Fascination Offshore'
 (Source: STIFTUNG OFFSHORE WINDENERGIE n.d.b)

As already indicated above, the success of the previous exhibition led to the initiation of a follow-up exhibition. Even though it reveals hard to measure success in itself, the Foundation suggests objective as well as subjective parameters to assess the success of its exhibitions. In this connection, the numbers of visitor can be named as one such variable. Also, the evaluation forms at display offer the possibility to the visitors to give feedback. These inquiries are analyzed at later point of this research. On the subjective side, experience of the staff is also regarded as being of interest in both the conception and the implementation phase. Eventually, as it is stated

by the Foundation, also the satisfaction of the institutions providing the subsidies influences whether or to which degree a project is assessed as being successful (cf. Appendix (7.2)).

As the successor of the former exhibition, the current 'Fascination Offshore' aims to approach the interior of Germany as an addition to the first exhibition on board of the MS Greundiek (cf. Appendix (7.2)). Due to its floating concept, the former exhibition was merely able to head for northern German harbour towns in the North and Baltic Sea. As its successor, the current exhibition intends to host the northern regions only with about one third of its locations. This becomes reasonable against the background of the Foundation's efforts to support social acceptance of offshore wind energy nationwide. In accordance with the BMWi it is agreed on serving central and southern German locations with about two third of the exhibition's overall contingent. Therefore, the inner parts of the country without direct geographical connection are given more careful consideration within the current concept (cf. Appendix (7.2)). This aspect is further illuminated in passage 2.4.7. Experience so far has shown that the generation of sites was easier in the northern parts than in central or southern Germany. This is why more locations of the exhibition could be found in northern Germany in 2013. It is stressed that the exhibition also gains reputation by its autonomous proliferative character (cf. Appendix (7.2)). By those means the access to structured information conceptualized for interested laymen is intended to be offered to the whole Republic of Germany rather than solely to people in the coastal regions.

Within the touring timeframe, it is targeted to serve between 24 and 30 locations altogether. As experienced, the exhibition timeframe can vary for each location. Depending on the framing program the exhibition serves, it can be exhibited between a single day and several weeks at one place. The exhibition is moreover conceptualized to cover a number of different events. By attempting to serve one third of job fairs, open day events at public institutions and events at higher educational schools each, it can be utilized more target-group-specific than its predecessor.

As much and as appropriate as possible the exhibition period is furthermore combined with framing events. Such can be panel discussions or days of action that fit thematically. Also cooperations can be named as a characteristic of the exhibition. As it is emphasized, cooperative work always displays important components to enrich the existing concepts. For 'Fascination Offshore', school workshops have been initiated together with the 'Deutsche Umweltaktion e.V.' (German Environmental Campaign, registered society; translation: AE). Also, the Foundation cooperates with different local partners or affiliated industrial branches to strengthen and distribute the message of the exhibition. The particular locations are additionally announced on the homepage of the Foundation. Also press releases and online notifications at local platforms are made. By those means it is attempted to attract visitors additionally to the criteria of choosing the exhibition locations by their frequency of occasional visitors (cf. Appendix (7.2)).

Since the exhibition displays a continuous process, also enhancements within the project's timeframe are performed. May it be in terms of updating factsheet with information of the fast-paced offshore wind energy branch or may it be the introduction of a new interactive component such as the info terminal as it is available since August 2014.

The following summary can be made for the explanations on the exhibitions of the Foundation. The former exhibition as well as the current one can be characterized as tools with the purpose to support social acceptance of offshore wind energy in Germany. The first exhibition additionally featured the museum ship MS Greundiek as a tourist magnet itself. The current exhibition represents a comparably lighter construction and a downscaled overall size of its antecessor. Since the running project was based on the former, its overall layout and design was already prescribed for the most parts.

The explanations on the exhibition are however not sufficient for approaching the research objective from a well-informed knowledge basis. In order to underline this awareness, the following section demonstrates the necessity of literature work for being able to assess the research objective. Afterwards, the literature-review is conducted in passage 2.4.

2.3 Relevance of theoretical research on social acceptance

Addressing the main research question of this study requires being concerned with specialized literature of social acceptance and related fields. It was however already argued that no complete theoretical overview on the research objective can be created in the present thesis (cf. chapter 1). This is underlined by pointing at the limited extent of this study. The given constraints do not allow a comprehensive analysis of available studies.

The empirical research as well as experience gained during the exhibition period of 'Fascination Offshore' therefore display important sources of information for addressing the present research objective. Nevertheless it is stressed that approaching the main research question also requires an appropriate appraisal of specialist literature. This statement is not least true because of the multiple features that social acceptance can potentially be accompanied with. An overview of parameters, which are deemed to be important in the present research, is thus created in the literature review of passage 2.4.

On the basis of these theoretical discussions, the empirical research can subsequently be conducted. That is, theoretically ascertained phenomena can for instance be tested for their existence in the research environment of this study. This can be exemplified with the north-south divide of social acceptance of offshore wind energy in Germany, as it was detected by the Foundation (cf. Appendix (7.2)). This specific phenomenon is thus theoretically discussed in passage 2.4.7 and later on subject to the analysis and discussion of the field research. The overall desk research of passage 2.4 consequently helps providing the theoretical basis for analyzing and discussing the collected empirical data in the chapters 4 and 5.

Also, occupying herself with the research objective from theoretical perspectives prevents the researcher from 'reinventing the wheel'. Additionally, the literature review allows for a more comprehensive understanding of the main research objective. Based on these arguments, the conduction of a literature review on social acceptance regarding renewables planning projects and affiliated fields in passage 2.4 is justified.

2.4 Characterizing social acceptance of offshore wind energy

2.4.1 Social vs. public acceptance of offshore wind energy

The explanations on 'Fascination Offshore' (cf. passage 2.2) reveal that acceptance is of central importance for the exhibition. This is not least because the Foundation verbalizes 'support public acceptance' as one of its main targets. The exhibition seems to be one of the concrete tools, which aims at fostering this set target in the face of offshore wind energy. As WOLSINK (2007) stresses it, 'attitudes towards wind power are fundamentally different from attitudes towards wind farms' (2007: 1188). The Foundation describes itself as an 'institution which supports the expansion of offshore wind energy in Germany' (STIFTUNG OFFSHORE WINDENERGIE 2009: 6). In the light of WOLSINK's statement it becomes apparent that the 'attitudes towards wind power' represent the aspect of interest in this thesis (WOLSINK 2007: 1188).

In a next step it is important to examine the term 'social acceptance'. This is necessary for being able to properly address the set target of the Foundation in the present research. Many scientific studies make use of the term 'acceptance' without further explaining which kind of acceptance they refer to (e.g. FRAUNHOFER ISE 2013: 21). WOLSINK (2013) underlines the fact that 'public' and 'social acceptance' recently display some of the most fundamental misconceptions though (2013: 11). With reference to WOLSINK (2012) it can be found that public acceptance means '[t]he degree to which a phenomenon is taken by the general public, the degree to which the phenomenon is liked by individual citizens' (2012: 12218). Social acceptance however describes '[t]he degree to which a phenomenon (e.g., wind power implementation) is taken by relevant social actors, based on the degree how the phenomenon is (dis-)liked by these actors' (ibid.: 12218).

WOLSINK (2012) continues his reasoning by stating that social resistance was often considered as solely referring to public acceptance in the past. Additionally, acceptance problems were ascribed to problems of education. In order to successfully implement new technologies such as offshore wind energy, however, WOLSINK argues for the inevitable need of creating social acceptance (ibid.: 12218-12219). This is because social acceptance goes beyond the dimension of public acceptance as WOLSINK (2012) outlines for the wind energy sector.

WOLSINK further underlines his justifications by using a model of WÜSTENHAGEN ET AL. (2007). It distinguishes between three dimensions of social acceptance. The model is further illuminated in passage 2.4.4. At this point it however also justifies referring to 'social acceptance' in this study, since the model can be used for classifying the target group of 'Fascination Offshore'. This argument additionally proves that it is rather the social than the public acceptance of offshore wind energy in Germany, which is aimed to be supported with the help of the exhibition. Consequently the objective of the Foundation to 'support public acceptance', which is considered most suitable for 'Fascination Offshore', needs to be rephrased. That is, the present research investigates in the potential of the exhibition to support social rather than public acceptance of offshore wind energy in Germany.

After the differentiation between social and public acceptance, the importance of the term 'acceptance' in connection to offshore wind energy is now discussed. This is reasonable since acceptance is not only of central importance for the work of the Foundation. Quite the contrary, a number of studies conducted on offshore wind power verify this aspect. Exemplarily an investigation carried out at the Guldborgsund in Denmark can be named (SOUTH BALTIC OFFSHORE ENERGY REGIONS 2013). Also on the East Frisian Islands of Borkum and Norderney

as well as on the Darß, which is adjacent to the Baltic Sea, studies on the acceptance of offshore wind energy were conducted (cf. HÜBNER, POHL 2012).

The offshore wind energy sector represents a comparably young industrial branch. Consequently also offshore-appendant economic sectors are subject to dynamic processes that the offshore wind energy branch itself is exposed to. During the last years, the tourism industry was for example repeatedly stated to underlie influences affiliated to the offshore wind energy branch. Still, HÜBNER and POHL (2012) in STIFTUNG OFFSHORE-WINDENERGIE (2013) find that concerns about a possible reduction of tourist frequencies due to the erection of offshore wind farms often vanished after the construction was finished (cf. passage 2.4.9). Also besides tourism, the range of potentially affected branches comprises nature conservation or electricity price issues amongst others. It thus reveals that numerous spheres of influence exist in various offshore-affected sectors. For this reason it is valuable to consider influential factors on social acceptance of offshore wind energy also from broader perspectives in the desk research.

2.4.2 Information and its role for social acceptance

WOLSINK (2007) states that ‘communication always misses its targets when it does not address the real concerns of the people to whom the message is directed’ (2007: 1191). Being concerned with the role of information in the face of social acceptance of offshore wind energy, the ‘message’ equals the provision of information regarding the offshore branch. It is phrased by the Foundation that ‘the main problem concerning their [offshore wind energy’s; annotation: AE] acceptance is a lack of information’ (ALBRECHT ET AL. 2013: 14). By implication this means that the Foundation ascertains the ‘messages’ as a limiting factor to social acceptance.

In order to examine the substance of the Foundation’s statement, the investigations by HÜBNER and POHL (2013) are used. Their study examines the role of information provision concerning the acceptance of offshore wind farms. As the intermediate results reveal, the statement of ALBRECHT ET AL. (2013) cannot be falsified by HÜBNER and POHL (2013). Rather, the authors find that residents ask for a more balanced information-policy. A provision of information is especially demanded for the planning period of a wind farm, as well as for the progresses of the planning project and its operation phase later on (HÜBNER, POHL 2013: 97). Against these results, the Foundation’s assertion that the role of information displays the central aspect for the debate of social acceptance can however also not be totally reinforced. That is, HÜBNER and POHL proof the role of information to contribute to the acceptance of offshore wind energy. However, they point out a much broader variety of factors having an influence on the attitude of their interview partners. That means that in order to support social acceptance of offshore wind energy projects, more than a sufficient provision of information is required, even if the ‘messages’ are directed to the people they concern (cf. WOLSINK 2007). Therefore a certain connection between information provision and social acceptance is underlined by HÜBNER and POHL (2013). Still it is stressed that a mere information provision is not the only influential factor ascertained in their study.

In summary, the investigations by HÜBNER and POHL take a different direction than the assessment of ‘Fascination Offshore’ in the present research. HÜBNER and POHL however demonstrate that further aspects can represent influential factors on social acceptance of offshore wind energy. This is why the following passages continue with illuminating further perspectives on the realm of social acceptance of offshore wind energy.

2.4.3 Argumentation and alienation influencing social acceptance

The previous passage concludes that a mere provision of information cannot be regarded as the only parameter influencing social acceptance of offshore wind energy. This insufficiency is further confirmed by RENN ET AL. (2014). They state that ‘communication [of information; annotation: AE] is a necessary but not a sufficient condition for acceptance’ (RENN ET AL. 2014: 3; translation: AE). This quotation disproves the statement of ALBRECHT ET AL. (2013: 14) that ‘the main problem concerning their [offshore wind energy’s; annotation: AE] acceptance is a lack of information’. Rather, RENN ET AL. (2014) argue that weak official justifications of planning projects represent a main problem for social acceptance of renewables planning projects. Another problem is named as difficulties of the public to understand. Furthermore RENN ET AL. (2014) argue that it is likely that arguments, which are brought forward to persuade the public of the necessity of planning projects, contain insufficient power. By implication that means that wrong communication strategies are only to a smaller extent considered necessary for social acceptance (cf. WOLSINK 2007).

Additional to argumentation, RENN ET AL. (2014: 3-4) introduce the argument of alienation. It contains potentially negative consequences for social acceptance of large-scale renewables planning projects. RENN ET AL. (2014) state that poor acceptance often represents a consequence of changing political and social contexts. The authors argue that issues of dispute can often culminate from socio-political alienation between the planner of a project and the represented public, for instance. That is, decision-makers and decision-affected in current planning projects are characterized by a continuously widening gap of mutual understanding.

RENN ET AL. (2014) further outline alienation to be distinguishable in a threefold way. Out of these forms, a debatable public interest of large-scale planning projects can result (cf. RENN ET AL. 2014: 4). One type of alienation concerns financial and environmental impacts. The second characteristic of current protests movements addresses personal sacrifices. This can be illustrated by referring to the large-scale project ‘Stuttgart 21’ (cf. BRETTSCHEIDER, SCHUSTER 2013). This planning project is concerned with transferring Stuttgart’s central station below ground level. The specific project demonstrates a balancing act of asking the affected people to cut down their individual conveniences if necessary for the common sake. In the eyes of RENN ET AL. (2014) such large-scale projects often lacks convincement and consequently also social acceptance. The third factor, which is crucial to social acceptance of renewables planning projects, is named as the transparency of the projects. The plurality and complexity of projects in combination with a lack of transparency has the potential to create mistrust in the attitude towards particular projects (cf. RENN ET AL. 2014: 4).

Concluding this passage it can be advisable to transfer experience of the past to the present. This could exemplarily be beneficial for current situations, which need to deal with social acceptance of large-scale planning projects. Also regarding offshore wind energy in particular, taking lessons learned into account can be highly valuable for supporting its social acceptance. This is because a ‘[s]uccessful implementation of new technologies requires social acceptance’ (WOLSINK 2012: 12218). In order to gain further understanding of social acceptance, the following passage introduces the three dimensions of social acceptance.

2.4.4 Dimensions of social acceptance

A differentiated view on the spheres of social acceptance of renewable innovations is conducted by WÜSTENHAGEN ET AL. (2007). The authors outline three distinct dimensions. One of them is called the socio-political sphere. Additionally, WÜSTENHAGEN ET AL. (2007) name the community and the market sphere as further diverging dimensions.

The market realm is argued to be associated not only with the consumers, but also with the financial actors concerning renewable innovation (cf. WÜSTENHAGEN ET AL. 2007). Interferences with the socio-political sphere easily appear. This for instance applies for large companies in the renewable energy branch. That circumstance is among others due to the stakeholders' great influence on political or financial decisions.

The socio-political sphere can be characterized as comprising social acceptance of policy makers, key stakeholders and the public in the face of policies and technologies (WÜSTENHAGEN ET AL. 2007: 2684). The socio-political dimension describes social acceptance on the broadest level. Breaking this realm down from an (inter-) national scale to the local level, yet the third dimension reveals.

The community sphere of social acceptance is subject to questions of fairness and trust (cf. e.g. GROSS 2007). Also it is about investment and infrastructure decisions made by local authorities and locally affected residents (cf. e.g. UPRETI 2004). The NIMBY-syndrome demonstrates a famous debate, which occurs in this local realm. The community acceptance contrasts the socio-political realm in the sense that it operates on a different geographical scale. It is stressed by WÜSTENHAGEN ET AL. that a common misinterpretation of these different levels results in the assumption of the policy 'to believe that social acceptance is not an issue' (2007: 2685).

Regarding renewable innovations, the outlined dimensions of social acceptance have the potential to interact and influence each other. This is why WOLSINK (2013) states that 'social acceptance is relevant in all layers and sectors of society' (2013: 11). Applying WÜSTENHAGEN ET AL.'s classification to the concept of 'Fascination Offshore', it reveals that the socio-political sphere is approached by the information-providing exhibition. This can on the one hand be justified by pointing at the target group of the exhibition being interested laymen (cf. passage 2.2). On the other hand the exhibition is presented at the national scale, which excludes it from the community dimension of social acceptance. While WOLSINK thus claims social acceptance to be important in all dimensions, 'Fascination Offshore' addresses particularly the socio-political sphere.

The next passage brings the discussion to yet another realm, the realm of social resistance. Social resistance underlies a variety of potentially influential factors. The following section therefore provides an introduction rather than a comprehensive overview on social resistance. This is justified with the limited extent of the present study. The provided impulses aim at enhancing the understanding of the complexity of the topic.

2.4.5 Motives and types of social resistance

Motives of social resistance – some impulses and drawbacks from the literature

Authors such as FIRESTONE and KEMPTON (2007: 1584) argue for a potential switch in parameters that are considered important by the public. This switch becomes apparent when it comes to offshore wind energy planning projects and either shapes opposing or supporting attitudes. FIRESTONE and KEMPTON explicitly name

the 'marine life' to come into existence as a matter of concern when transferring decision-making argument from onshore to offshore. In their study, 'marine life' represents a variable of growing importance for the formation of opinions on the part of the interviewed persons. Concluding FIRESTONE and KEMPTON's case study, the parameter 'marine life' is ascertained important for an opinion-shaping on offshore wind energy in the USA. It can be considered likely that a shift in parameters is subject to similar characteristics when transferring the outlined US case study to Germany. That is, aspects detected by FIRESTONE and KEMPTON (2007) could equally fuel social resistance of offshore wind energy in the German case.

In a next step it is interesting to analyze the identified variable in the light of a classification, which is suggested by HORST (2007) for onshore wind power plants. HORST introduces the terms 'use value' and 'non-use value' areas (2007: 2708). The author finds it tempting to hypothetically characterize values of no direct use for the individual as less negotiable. Use values on the contrary tend to be more negotiable in terms of 'technical and locational compromises' (ibid: 2708). HAGGETT (2011) suggests that '[onshore; annotation: AE] factors are just as applicable offshore as onshore' (2011: 504). With the background of this statement, HORST's grouping is applied to the parameter 'wild life' (FIRESTONE, KEMPTON 2007: 1587).

It however reveals that this particular parameter cannot be grouped by HORST's (2007) classification. That is, the 'marine life' can neither be classified as a 'use value' nor as 'non-use value areas' by HORST (2007: 2708). This is justified by pointing at the onshore wind power plants that HORST intended to direct his classification to. In the light of the findings by FIRESTONE and KEMPTON (2007) concerning the 'marine life', the statement of transferability brought forward by HAGGETT (2011) is consequently not applicable to HORST's classification. This inadequacy indicates that even specialist discussions can be fraught with uncertainty. HORST (2007) further reinforces this awareness. He claims for continuing research, which is needed to identify underlying motives of social resistance in the face of wind energy.

One further parameter, which potentially represents an influential factor for developing resistance against offshore wind energy, is the aesthetic value of the landscape. For this variable the literature stresses that it is insufficient to solely ground a landscape-based opposition on aesthetic factors. DEVINE-WRIGHT (2004) in BIDWELL (2013: 191) argues that this would be a narrow-minded assumption. More preferably a symbolic landscape value is likely to be ascribed to the landscape by the public. Since this underlies a highly personal perception, the question of spoiling the horizon is one 'of diverging values, not disputed facts' (WARREN, BIRNIE 2009: 121).

Motives of social resistance – some impulses and drawbacks on the German scale

After illuminating some potential trigger points of social resistance, which are debated in the specialist literature, the discussion now focuses on the German scale. The federal *Energiewende* target paves the way for potential resistance against offshore wind technology. That is, on the local scale UPRETI (2004: 785) would for instance outline 'few economic benefits of local people' that biomass energy development is connected to. The German offshore wind energy sector however represents an important pillar of the national *Energiewende* target. On the way towards fulfilling the federal expansion target of 6,500MW installed offshore capacity by 2020, continuous efforts are required. This becomes reasonable when pointing at the currently installed and

grid-connected 630MW offshore wind energy. Another 830MW are already installed but so far lack a grid connection. Further 1,800MW are still under construction (DEUTSCHE WINDGUARD 2014: 2).

Against these numbers, the set objectives of the Federal Government necessitate a supervision of the offshore planning frameworks at the national level (cf. WÜSTENHAGEN ET AL. 2007: 2687). Offshore wind development in this regard is characterized as a large-scale implementation goal. The expansion targets are furthermore likely to be accompanied with a tendency of growing top-down and distinctive hierarchical structures in order to fulfill their objectives (cf. DEVINE-WRIGHT 2011: 57). Such set targets on a national scale are necessary in order to put large-scale planning projects into practice (COWELL, OWENS 2006: 403).

The given explanations at the same time however also contain potential initial points for social resistance. WARREN and BIRNIE (2009) formulate that 'arguments deployed to support wind power mostly relate to [...] national aspects, whereas the case against wind energy focuses mainly on local or regional issues' (WARREN, BIRNIE 2009: 118). In other words, the *Energiewende* is likely to be confronted with public concerns on lower spatial scales. Even though the *Energiewende* thus constitutes a national common task, this does not necessarily include an overall positive public attitude towards offshore wind energy development. WALDO (2012) reinforces this awareness on different perspectives, which depend on the extent of planning projects. The author states that resistance to large-scale planning projects is likely to differ from community's local renewables planning projects (cf. 2012: 692).

WOLSINK additionally explains that '[t]he fact that a minority does not support wind power is not surprising because there is hardly anything in life that is universally supported' (2007: 1192). In this respect the ideas of a generally positive attitude towards offshore wind power on the one hand and the attitudes towards specific wind farms on the other must not be merged (ibid.: 1191). This is because 'green' energy is by most people seen as a moral issue which may not be opposed. The social acceptance of wind energy projects can however differ significantly from the social desirability of renewables (cf. e.g. HORST 2007; EK 2005; WARREN, BIRNIE 2009; KROHN, DAMBORG 1999; DEVINE-WRIGHT 2007).

Another potential factor causing social resistance against offshore wind energy in Germany addresses finances. The comparably young offshore wind energy sector still requires financial aid in order to operate profitable (FRAUNHOFER ISE 2013: 21). Its financial assistance is provided via the so-called statutory feed-in compensation. This mechanism is responsible for compensating the additional costs that the less-experienced offshore branch still requires (OWIA 2013: 1). Within this complex model, several exceptional rules for energy-intensive industries and various inconsistencies exist. They cause higher charges for the end consumer and additionally raise dissatisfaction (cf. e.g. IWR n.d.: passage 4). As EK (2005) phrases it for the Swedish case, 'if consumers have preferences for the environment, [...] it [is] possible for these consumers to reveal their "green" preferences by paying a premium for "green" electricity' (ibid.: 1678). In Germany the reallocation charge is however to be paid by every household notwithstanding his willingness to contribute to a 'green' development. At this point of the discussion it is reasonable to broaden the viewpoint to the mass media and its ability to influence the public opinion. As the German energy prices rose, it was first and foremost the media, which took on those 'shortcomings' of the German legislation as points of complain. Exemplarily, highly suggestive

headline such as 'Germany reforms promotion of green electricity – it however remains expensive' could even be found in international print media (NEUE ZÜRCHER ZEITUNG 2014; translation: AE). In this connection also WOLSINK (2000: Table 2, 56) provides a summary of aspects, which are addressed most by the media with reference to wind energy. 'Interference', 'malfunction', 'environmental benefits' and 'landscape' are listed as the most frequently used topics related to the wind energy branch. This listing does not yet tell about whether judgements are included in the particular articles. The German mass media's reporting however give numerous pieces of evidence for suggestive journalism on offshore wind energy (cf. e.g. DIE WELT 2014).

Additional to those on-topic examinations of the media's influence, also more generalizable aspects can be found for large-scale projects. Here, it can again be referred to 'Stuttgart 21'. Investigations on appendant reporting detect the frequency by which print media addresses this particular project. By continuous reporting, the media influences people's willingness to get engaged in related protests (BRETTSCHEIDER, SCHUSTER 2013: 119-120). The mass media is therefore found to have the ability to influence and shape the public opinion.

Three types of social resistance

One more perspective is illuminated for the discussion of social resistance on offshore wind energy. It specifies the different types of social resistance as categorized by HORST (2007). The author names three groups, which are the 'group attitudes', 'group tactics' and 'individual motivation' (HORST 2007: 2706).

Examinations on the group tactics 'may not necessarily be able to shed much light' on the present research (HORST 2007: 2706). This is because they may for instance solely 'be copied from protests in different places on completely different issues' (ibid.: 2706). For the group attitudes HORST (2007) argues that 'the initial opposition rises with (certain) individuals' (ibid.: 2706). Accepting this argumentation, most information can consequently be drawn from the 'individual motivation' type of social resistance.

Within this group, further specification can be conducted. Even though a rejecting opinion towards a planning project can exist on the individual level, 'the existence of negative attitudes among individuals will not by definition result in active opposition' (HORST 2007: 2706). This statement points at the fact that individual efforts increase tremendously when they are consolidated in an organized group opposition. Among these group rejections, another division can be conducted between active and passive opponents to a planning project. In the group of active opponents, the protest leaders can be found. The majority of people normally take a position of the more silent opposition though (cf. HORST 2007: 2710). That is, they rather join protest marches or sign petitions instead of actively taking a voice in form of a leading position.

Preliminary summary

The bigger the renewables' range of influence, the more complex influential factors for potential social resistance seem to become. The national common task of developing offshore wind energy in Germany consequently includes a great number of factors, which possibly impact public opinion shaping. This passage aimed at providing an insight in potential trigger points causing social resistance on offshore wind energy. Furthermore it was outlined that the topic of social resistance regarding offshore wind energy is connected to a high degree of disputability, even in the literature (cf. e.g. EK 2005; WARREN, BIRNIE 2009; KROHN, DAMBORG 1999).

2.4.6 Limits and possibilities to direct democracy – an insight

In connection with the mega-project 'Stuttgart 21' the question occurred whether public protests, petitions and riots would have been of less intensity if a set of tools called 'direct democracy' was applied. Also in regard to lessons-learned from this large-scale project a reflection can be conducted. It refers to the transferability to the offshore wind energy sector. The question occurs whether the application of principles of direct democracy would result in more planning security or whether it would lead to instable results (cf. FISCHER 2010: 19).

A first glance in the explanations of direct democracy already reveals the underlying nature of the principle. That is, different instruments are enabled by the constitution and statutory regulations. These instruments allow the citizens to exert their influence on legislative decisions either by voting or by putting it on the agenda (KOST 2013: 10). The mere existence of the apparatus of direct democracy can be characterized as a re-active tool. Moreover it can be stated to already impact the representative democracy, such as the parliament. This is illustrated by FISCHER (2010). The author describes a two-level model in which the first step outlines the representatives. They make a decision regardless the second level in which the citizens themselves can revise the choice. FISCHER claims that the manner in which the decision is conducted already makes the direct democracy principle exceptional. This is argued for due to the existence of the outlined second step (ibid.: 21). This additional level can be characterized as an extension as well as a supplementation of the existing process of decision-making by elected representatives (KOST 2013: 10).

Hypothetically the existence of such a mechanism is assumed for offshore wind planning projects in Germany. An analysis of strengths and weaknesses of the supposed principle could be conducted corresponding to the analysis conducted for the large-scale project 'Stuttgart 21'. Due to the extent of this section, one exemplification for advantages and disadvantages each is presented for illustrating purposes. Those examples give impulses for creating ideas how an application of the principle of direct democracy could affect decision-making from a planning perspective on offshore wind energy.

One advantage of the direct democracy instrument appears to be the more efficient utilization of financial resources (cf. FISCHER 2010: 21-22). A cut in expenditures is a likely result of direct democracy. It could be assumed to also result in the light of offshore wind-related planning. By applying this mechanism, more awareness for the effective distribution of finances could already result from the first out of two steps as described by FISCHER (2010: 21). The underlying power of a potential direct veto right of the public gives impulses for the following scenario. RENN ET AL. (2014) state that 'the mere fact that a decision has come into existence in a democratic way is not sufficient for the acceptance of that decision' (ibid.: 3; translation: AE). Applying this aspect to an offshore wind power planning project might therefore already result in immediate opposition by the public. The reasons are speculative, ranging from personal landscape perceptions (cf. e.g. FIRESTONE, KEMPTON 2007; WARREN, BIRNIE 2009; LADENBURG 2008) to a lack of individual willingness to financially contribute to renewable energy development (cf. e.g. EK 2005). At any rate, consequences could among others be tremendous efforts in terms of financial and temporal resources spent to collect votes and create alternatives. The latter aspect can be illustrated by pointing at the *Energiewende*. It strives for the fulfillment of the national targets regardless potential obstacles that need to be considered on that way.

Again the direct democracy principle is hypothetically supposed to be in practice regarding the offshore wind energy sector. In this context it appears reasonable to widen the view towards conditions, which facilitate a target-aimed procedure from the beginning. In order to pave the way for offshore wind energy development under the supposed precondition, it can be pointed at a recognition underlined by GROSS (2007). In her study on '[c]ommunity perspectives of wind energy in Australia' she finds especially two types of justice applicable in her investigation. Taking the principles of 'procedural and distributive' justice into account 'enabled the community fairness framework to be developed', she concludes (GROSS 2007: 2735). Following her line of argumentation also WÜSTENHAGEN ET AL. (2007) acknowledge that at least on the smaller scale the questions of 'How can costs and benefits be shared' and 'Is there a fair decision making process giving all relevant stakeholders an opportunity to participate?' are relatively important.

In the light of a hypothetically existing direct democratic principle, the consideration of those two principles might lead to a convergence of the political and public concerns. It could be concluded that also in the current German legislation it might be advisable to consider the affects of the procedural and distributive justice carefully. Even though they are not utilized currently, they may help reduce alienation (cf. passage 2.4.3). Additionally, Ek (2005) stresses WOLSINK's (2000) appeal 'that institutional constraints are crucial and that open collaborative approaches, from both political actors and wind power developers, is a fact of major importance in order to build up what he [WOLSINK; annotation: AE] calls institutional capacity in the wind power sector' (Ek 2005: 1679). WOLSINK himself later extends this emphasis by stating that '[p]olicy actors and wind power developers should focus on building up institutional capacity for wind power [...], instead of complaining about public attitudes' (Wolsink 2007: 1204).

Appeals such as exemplarily outlined visualize the urgent need for public involvement. Also they illustrate the need to take social concerns in the face of offshore wind planning projects into consideration in order to support their social acceptance. The principle of direct democracy is not in practice in the key dimensions 'planning' and 'siting' in the German offshore wind energy development. However, a continuous analysis of applicable principles in order to give a voice to the public should not be ignored in planning practice.

2.4.7 North-south divide – a myth?

The theoretical discussion of a north-south divide of social acceptance of offshore wind energy in Germany is introduced by reviewing investigations from two German neighboring states. First, it is referred to WOLSINK, who addresses a potential north-south divide for the Dutch case. WÜSTENHAGEN ET AL. (2007) get to the heart of the matter of the 'Netherlands' national Wadden Vereniging survey'. The authors conclude that 'the support or rejection of wind turbines in the Wadden region was not in any way related to the distance' (WÜSTENHAGEN ET AL. 2007: 2686). For the case of the Netherlands the study does therefore not confirm the existence of a north-south divide of social acceptance of offshore wind energy. The case displays in the same way when focusing on LADENBURG's investigations on the Danish case. He states that '[i]nterestingly, respondents living close to either on-land or offshore wind turbines did not display a more negative attitude towards wind power generation when compared to respondents who were not living close to wind turbines' (LADENBURG 2008: 111).

With the focus on Germany, the case seems to be different though. Within the Federal Republic, a north-south divide of social acceptance of offshore wind energy was already experienced by the Foundation (cf. Appendix (7.2)). Due to the topographical conditions, Germany extends distinctly further south from the sea into the inner land than the Netherlands. Also Germany includes regions, which are further away from the sea than in it can be found in Denmark. This is why the German topography could condition a different picture regarding social acceptance of offshore wind energy.

The outlined argument on the topography reinforces the recognition of the Foundation. It perceives offshore wind energy to display a more common topic in the northern German regions. This can again be confirmed with the physical closeness of the coastal areas to the offshore wind farms, the Foundation argues (cf. Appendix (7.2)).

Due to the fact that the energy generating technology off the coast displays a young industrial branch, rather few scientific investigations exist on a potentially related north-south divide yet. A constantly increasing number of indications however give evidence of the existence of such a disparity. On the one hand studies such as ALBRECHT ET AL. (2013) or KEHMEIER (2013) confirm the potential of offshore wind farms as touristic attractions. They emphasize the offshore technology's potential to be integrated in the social and industrial structures, which exist in the northern regions.

On the other hand, however, opposition against offshore wind energy surfaces in the central and southern German areas. Multiple variations can be recognized in this connection, such as in the media and public campaigns, to only name a few (cf. e.g. FAZ 2014). To visualize the current lack of social acceptance of offshore wind energy-related fields in the south, a recent press release is outlined. The newspaper article of WIRTSCHAFTSWOCHE (2014) gives indication for the existence of counter-movements in Bavaria. It reports about people who are demonstrating against the federal intentions to build a national high-power transmission grid connection. This transmission line is intended to supply the mountainous south with wind energy that is generated in the northern Germany. The resistance exemplarily illustrates a north-south divide of social acceptance of offshore wind energy. Since especially its visual impacts would affect many villages in Bavaria, the high-voltage transmission lines became a topic well-covered by the media.

Such kind of reporting reinforces the Foundation's apprehension that the exhibition 'Fascination Offshore' enjoys greater popularity in the north of the German Republic. By implication it strengthens the awareness that offshore wind energy is likely to encounter more difficulties in the south. A north-south divide is therefore not considered as a myth in face of social acceptance of offshore wind energy in Germany. This theoretical discussion is however empirically reviewed in the field research.

2.4.8 NIMBY-syndrome – a myth!

The so-called not-in-my-backyard-syndrome (hereafter: NIMBY) enjoyed great popularity within the last decades. As HORST (2007: 2705) phrases it, the scientific literature on 'public opposition to facility siting' has been complemented by research, which addresses the siting problem of renewables planning projects. In the author's eyes, especially the wind energy sector can be named in this connection. A great number of surveys have been conducted on possible causes leading to the NIMBY-syndrome in this regard. WOLSINK (2000)

however emphasizes that NIMBY only displays one out a number of four different explanations, which illustrate the potential objection of wind farms. In other words, WOLSINK declares NIMBY a 'myth' that causes widespread misunderstanding. This misunderstanding first and foremost results from the frequency in which NIMBY is incorrectly used as an explanation for the variety of existing opposing motives. As a consequence, WOLSINK (2000) stressed the importance of carefully investigating the true reasons that underlie the opposition to wind farm projects. This appeal is further supported by BURNINGHAM (2000: 55), BIDWELL (2013) and UPRETI (2004). BIDWELL for instance states that NIMBY often depicts a too 'simplistic explanation [...] for [...] opposition' (2013: 189). Also UPRETI (2004) concludes that NIMBY does not display a universal explanation for social opposition. The author argues that '[p]ublic opposition cannot be simply labeled as NIMBY [...]' (2004: 788).

It needs to be stressed that the greatest shortcoming of NIMBY displays the absence of a differentiation on what explanations underlie particular opposition and why a particular rejection actually takes place (cf. BIDWELL 2013: 191). WOLSINK (2007) continuative argues that selfishness or egoism are simply too narrow-minded and badly outlined to represent the only explanations for rejection (2007: 1199). He adds for consideration that '[a]ttitudes towards wind power are fundamentally different from attitudes towards wind farms, and this distinction is at the heart of most public attitude misunderstandings' (2007: 1191). In this regard WOLSINK (2007) examines the only true NIMBY to be '[a] positive attitude towards the application of wind power, combined with an intention to oppose the construction of any wind power scheme in one's own neighborhood' (2007: 1201). The other distinguished opposition types are also classified by WOLSINK (2000). A precise formulation, which still meets the appropriate characterization of his division, is made by HORST (2007: 2711). Omitting the "'classical" (i.e. selfish) NIMBY' (ibid.: 2711), the other opposition types are:

- anti-wind; 'not in any backyard variant' (NIABY)
- anti-process
- anti-project

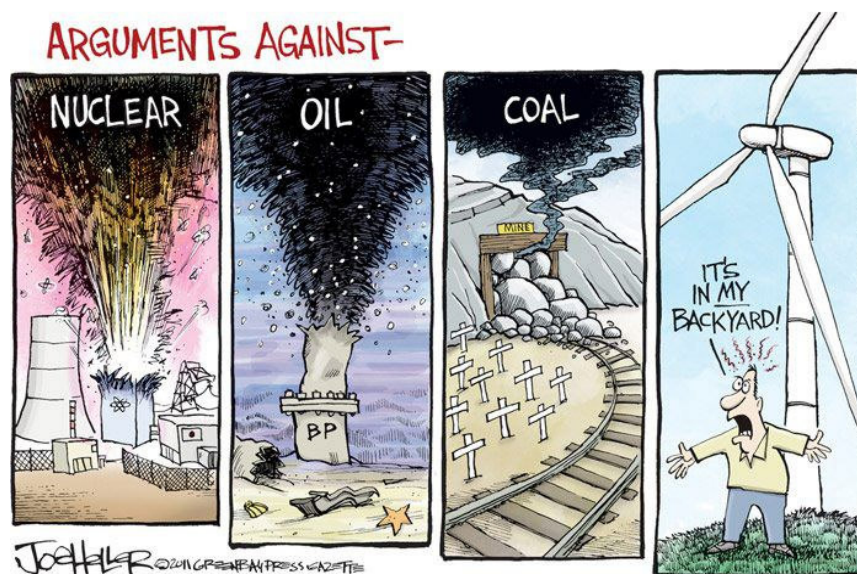


Figure 4: Arguments against Nuclear, Oil, Coal, NIMBY
(Source: <http://www.hellertoon.com/main.html>)

Other variables than the simplistic NIMBY explanation can be proven to be more influential on the public opinion in most of the falsely concluded opposing cases. For doing so, it is pointed at the investigations of WOLSINK (2000). His research demonstrates that the 'visual impact' above all other potential parameters was measured to be most influential for opposing a wind farm in one's own neighborhood. Also the variable of 'cleanness' was attributed a great value for forming an either opposing or supporting opinion concerning wind energy. It is emphasized that this parameter refers to the benefit of the renewables for the environment. Another factor was determined as 'annoyance', which is caused by the interference of the wind turbines. Also the 'efficiency' of the technology and NIMBY were found to display parameters of influence. They however are named as factors that are less crucial than the visual impact and the cleanness of the wind technology (cf. WOLSINK, 2000: 55, Figure 1).

DEVINE-WRIGHT (2011) approaches the 'backyard' discussion from yet another perspective. He argues that past social research on renewable energy technologies mostly focused on the aspects of '*what* is developed and *how* it is deployed' (DEVINE-WRIGHT 2011: 58; accentuation taken over). For this reason DEVINE-WRIGHT (2011) adds the dimension of '*where*' for consideration (ibid.: 58). Discussions about 'sites' or 'places' are extensively discussed in the specialist literature (cf. e.g. PORTUGALI 2006). Therefore it is further outlining these aspects in this passage. Nevertheless the 'where' dimension can be named as a supplement to the previous explanations on NIMBY. This is because the 'siting perspective [...] is extremely effective at drawing attention to salient *objective* features of potential locations for renewable energy projects' (DEVINE-WRIGHT 2011: 58-59). By implication it reduces the subjective features in their relative importance though.

First and foremost it however is due to a number of underlying subjective parameters that the ocean as the locality for offshore wind projects can possibly be considered as a backyard itself. This statement can be underlined with findings from KEMPTON ET AL. (2005). More generally they state that 'the ocean is a special place that should be kept natural and free of human intrusion' (2005: 119). Moreover KEMPTON ET AL. quote interviewees who specifically described offshore policy as 'happening in our backyard' (KEMPTON ET AL. 2005: 120). In the face of these insights it needs to be stressed that the backyard discussion can also be present when transferring the wind energy debate offshore. KEMPTON ET AL.'s study furthermore demonstrates the necessity to empirically investigate in this direction.

Altogether the turn of the millennium was continuously accompanied by the awareness that NIMBY cannot be considered as a generally-valid justification for opposing viewpoints in the field of renewables. Rather, justifications based on NIMBY contain the potential to mislead the analysis of the true reasons underlying social opposition. Still, WARREN and BIRNIE (2009) admit that '[i]t is tempting to describe this apparent 'attitude-behaviour gap' as NIMBYism' (2009: 112). That might also be why 'BURNINGHAM (2000) and WOLSINK's (2006) calls for academics to abandon 'the language of NIMBY' have had limited success to date' (HORST 2007: 2706).

2.4.9 Dynamic character of social acceptance

From the various parameters outlined in the previous passages it appears that social acceptance does not depict itself in a static way. Rather social acceptance can generally be characterized with a number of sequenced periods. Those stages form the image of a u-shaped curve of attitudes that typically prevail during a

project's life-cycle. This dynamic character of social acceptance can be illustrated by using an abstract simplification (cf. Figure 5). It can be argued that this u-shape is applicable to planning projects in general. It therefore not necessarily needs to be associated with renewables planning projects. WOLSINK (2007) still finds the u-shape applicable also for his investigation on onshore wind planning projects.

More precisely WOLSINK (2007) states the attitudes of the public to start with a very positive opinion on wind energy in general when there is no concrete planning yet. This attitude changes to a much more negative respectively critical thinking, which arises when a particular project site is announced. No guarantee exists for achieving a more positive attitude again. However, WOLSINK's research reveals that the general attitude changes to somewhat more positive again a certain time after the construction.

WOLSINK (2007) investigates the dynamic character of social acceptance in the Netherlands for concrete onshore wind planning projects. This does not necessarily have to display the dynamic movement of social acceptance in regard to offshore wind energy in Germany. Still it is also a well-known phenomenon to the Foundation that the overall acceptance towards offshore wind energy projects fluctuates over time. This is why an u-shaped character of social acceptance on German offshore wind energy is assumed for the present research (cf. also HORST 2007). The empirical research revisits this dynamic character again.

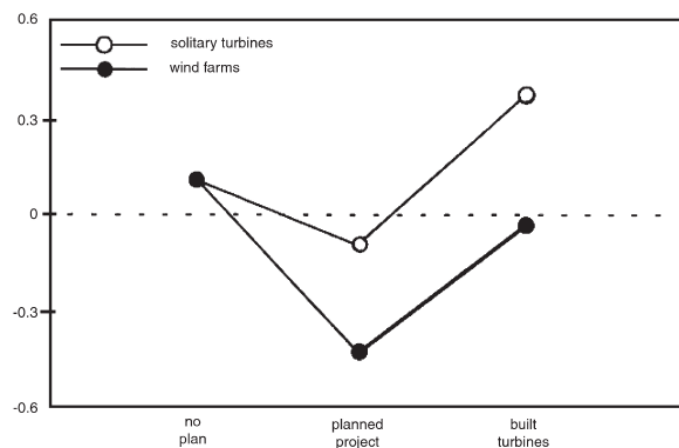


Figure 5: Development of public attitudes towards wind power
(Source: WOLSINK 2007: Figure 3, taken from WOLSINK 1994)

2.4.10 Preliminary summary of literature review

Passage 2.4 gave an overview on the diversity of motives, which potentially affect social acceptance of offshore wind energy in Germany. Different characteristics of social acceptance were addressed as well as the role that information provision can take in this regard. Moreover the recognition resulted that social acceptance of offshore wind energy cannot be regarded as a fact that accompanies the transfer from onshore to offshore. Also it revealed that statements such as 'the advantage of offshore turbines is characterized by [...] higher acceptance of the general public' (FRAUNHOFER ISE 2013: 21; translation: AE) lacks a precise disambiguation. The quote moreover exemplifies that falsely made assumptions on social acceptance of renewables projects are not only traceable in the past. The risk of frivolously reasoning on social acceptance of renewables planning projects with sparse argumentation still exists today.

The next step in proceeding with the present research can be characterized as more comprehensible. After the literature review, a classification of the exhibition is carried out in the following sections. This reveals important in the light of WOLSINK's statement that communication needs to be addressed to the real concern of the people that the information is directed to (cf. WOLSINK 2007: 1191). His statement stimulates the investigation of 'Fascination Offshore' from yet other perspectives. That is, the exhibition is in the following examined by applying abstract approaches in order to assess its concept. This procedure on the one hand complements the theoretical discussions of passage 2.4. It on the other hand paves the way for developing the conceptual model in passage 2.9. Based on this conceptual model, approaching the main research question can follow a tailor-made course of action in this study.

2.5 Theoretically analyzing the exhibition concept

The present section approaches the concept of 'Fascination Offshore' from abstract perspectives. This working step is important because a classification of the information-providing tool of the Foundation has not yet been conducted. Performing such placement furthermore reveals necessary against the background of the main research question. It is reasonable that the relevant aspects of the research objective need to be clarified prior to its actual assessment. In order to do so, the exhibition is investigated by using three concepts, which are considered valuable for the subsequent evaluation of the exhibition.

An exhibiting concept with a certain focus cannot be created by using a template. By implication also no blueprint procedure exists for the classification of 'Fascination Offshore'. Nevertheless it is possible to approach it. In the following this is initiated from broader perspectives. Besides the three abstracting approaches, four components for forming social acceptance are additionally outlined. As much as the approaches they serve the aim to provide a comprehensive basis for the data analysis and the subsequent discussion in the chapters 4 and 5. Therefore it is not yet targeted at assessing 'Fascination Offshore' by means of the proposed methods. In the course of this section it is rather determined whether the suggested concepts display beneficial tools for an evaluation of 'Fascination Offshore'. Their application is conducted in passage 5.2.

2.5.1 Arnstein's ladder of participation – a descriptive classification

In the introduction to 'Fascination Offshore', the exhibition was characterized as an information-providing concept that aims at supporting social acceptance of the German offshore wind energy. This characteristic points into the direction of being grouped according to the participation ladder model by ARNSTEIN (1969). 'Fascination Offshore' is therefore classified by ARNSTEIN's model in this passage. The participation ladder assesses the degree of citizen participation. Developed 'to encourage a more enlightened dialogue' (ARNSTEIN 1969: 216), Figure 6 visualizes the degrees of participation contained in the concept of 'Fascination Offshore' as suggested by ARNSTEIN. The green box indicates the level of participation, which the exhibition can be ascribed to according to its outlined attribution (cf. passage 2.2): It reveals that 'Fascination Offshore' is not placed in the superordinated level of 'nonparticipation'. Also it does not belong to the stages appendant to 'citizen power'. Rather it can be ascribed to the lowest step of the superordinated level of 'tokenism'. 'When [...] proffered by the powerholders [...], citizens may indeed hear and be heard' (ARNSTEIN 1969: 217) at this stage.

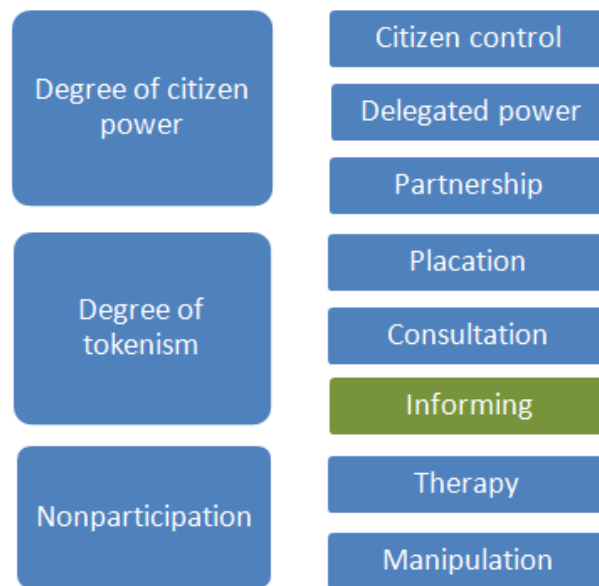


Figure 6: Ladder of Participation
(own illustration; based on ARNSTEIN 1969: 217)

Until this point, the classification of ‘Fascination Offshore’ in the light of ARNSTEIN’S model was conducted. A discussion of possible conclusions does however not yet take place. This is subject to the comprehensive analysis of passage 5.2.2. In order to pave the way for this discussion on the linkage between the degree of participation and social acceptance, some further theoretical considerations are illuminated below.

One awareness in particular results from being concerned with the ladder of participation. The steps on ARNSTEIN’S ladder can be associated with different forms of public participation. The participation levels again contribute to social acceptance to different extents. In the light of this phenomenon, the participation steps on ARNSTEIN’S ladder seem to be approachable also from the perspective of social acceptance. For this reason assessing ‘Fascination Offshore’ with ARNSTEIN’S model can give some indications on how different types of participation could contribute to social acceptance. The theoretical basis for a comprehensive discussion of this connection in passage 5.2.2 is outlined below.

Regarding the international research on public participation, it can be referred to a study conducted by GROSS (2007). For her case study on wind energy in Australia, GROSS states that the principle of appropriate participation was considered important on the part of the affected people (2007: 2736). On the German scale it can be pointed at another research, which was lately conducted. It examines the acceptance of offshore wind energy on the local scale of coastal regions. Also in this study it is found that residents, who were affected by offshore wind planning projects, wish for an appreciation of their local expertise with regard to the realization of the wind farms (cf. HÜBNER, POHL 2014: 9). Concluding, the request for an appropriate degree of participation on the part of the affected people is detectable in both studies that were exemplarily outlined.

An additionally interesting phenomenon accompanying the possibilities to participate in renewable planning projects is determined by RENN ET AL. (2014). The authors demonstrate the downsides of offering broad options for public participation. They argue that the self-efficacy can result in a paradoxical phenomenon (cf. passage

2.5.4). RENN ET AL. explain that the fewer the public perceives its possibilities to influence a planning project, the more likely it is that particular measures are simply accepted by the people. On the contrary, however, it is stated that an increased level of concessions and public offerings to participate are more likely to result in growing refusal of acceptance (2014: 2). According to RENN ET AL., the three upper stages of ARNSTEIN’S participation ladder are consequently more vulnerable to increasing opposition against renewable planning projects than the superordinated levels of ‘tokenism’ and ‘non-participation’. Notwithstanding these considerations it is emphasized by RENN ET AL. that an enhanced degree of participation must not be considered as a stimulus for top-down enforcements of renewable planning projects. Even despite the fact that experience proofed social resistance to emerge from higher degrees of participation, a top-down pushing through of renewables planning projects creates mistrust in the public (cf. HÜBNER, POHL 2014).

2.5.2 Contemporary planning spectrum – technical and communicative rationales

From the mere descriptive classification of the exhibition in terms of ARNSTEIN’S participation ladder, it is continued with discussing the spectrum of planning approaches. Initially a first insight of the contemporary planning spectrum is given. Afterwards a brief overview is created on the past tendencies that can be found in planning practice. Subsequently the German offshore wind planning approach is classified according to the contemporary planning spectrum. The exhibition concept under investigation is afterwards characterized against the knowledge of the planning spectrum.

A first introduction to the mainstream approaches in planning theory is well-illustrated in Figure 7. As it is visualized, the so-called ‘technical’ and ‘communicative’ rationales contrast each other as two extremes of the planning spectrum (cf. Roo 2007: 111). The technical rationale represents an objective reality based on plain facts. It characterizes a bounded rationality perspective on an object-oriented worldview. The application of this realism is not restricted to one particular terminology. WOLSINK (2010) for instance refers to this certain concept as ‘technocratic planning’ (2010: 306). The communicative rationale on the other hand depicts an agreed reality of what is perceived by individuals. It describes a relativistic and inter-subjective viewpoint that among others accounts for a plural society (cf. HU ET AL. 2013: 44, Figure 1). It sums up the negotiating process between the affected in order to reach consensus.

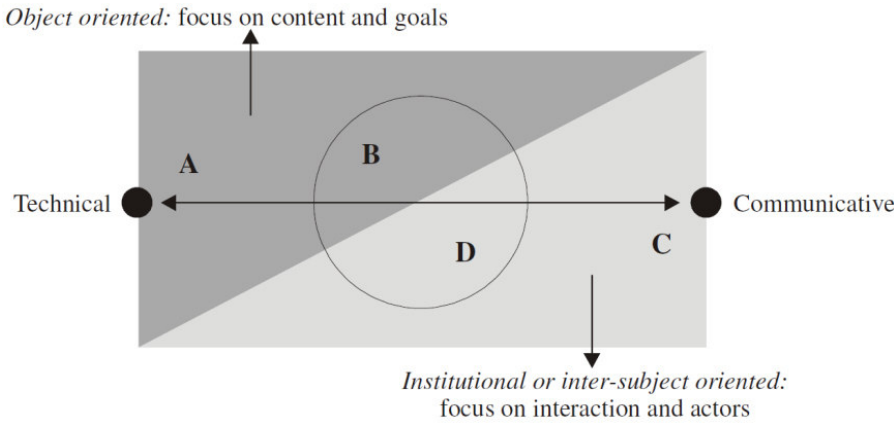


Figure 7: ‘Orientation and focus of mainstream approaches in planning’

(Source: Roo 2007: 111)

The last decades were characterized by a shift from the technical towards a more communicative approach in planning (cf. Figure 8). On the way from the one extreme to the other, several further strategies can be distinguished. The classification of approaches alongside the emphasized shift for instance includes the so-called advocacy planning (cf. ALLMENDINGER 2009: chapter 7) and the actor consulting (cf. Roo 2007: 110). Altogether, they form the spectrum of perspectives in between the extremes (cf. Roo 2007: 110). For selecting an approach from the variety existing in between the two theoretical extremes, a conscious weighting takes place. As ZUIDEMA (2011) puts it, such balancing is done ‘in the midst of two related choices’ (ZUIDEMA 2011: 89). He characterizes the first of these alternatives as options between ‘the functional ambition of our approach’ (ibid.). The second is called ‘the structural configuration of our approach’ (ibid.).

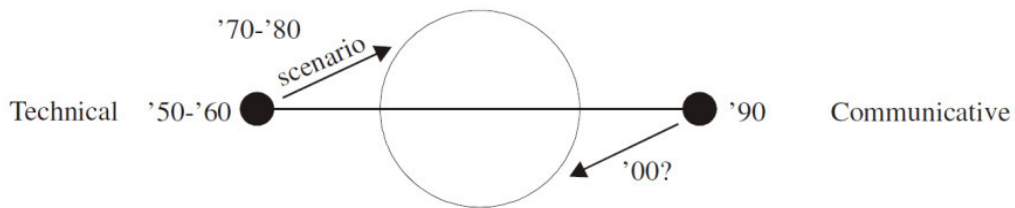


Figure 8: ‘Development and progress in planning theory and practice’

(Source: Roo 2002; in Roo 2007: 110)

The gained knowledge on the approaches in planning theory can in a next step be transferred to German offshore wind energy planning. It can be argued that the siting process of the wind farms in the German North and Baltic Sea does not demonstrate an agreed reality based on the communicative rationale (cf. Roo 2007: 111). This statement is underlined by pointing at the legal steps that offshore wind project planners are obliged to take. The responsible authority in Germany for giving permission for offshore wind energy planning projects is with the so-called BSH. It communicates the legal requirements and issues allowance for offshore wind projects (cf. BSH 2014). It is refrained from further going into detail with the total amount of required procedures due to an existing comprehensive overview on the part of the BSH.

In view of the given explanations it appears reasonable to classify the planning approach of siting offshore wind power projects as a coordinative type. Also it can rather be ascribed to the technical rationale than to an inter-subjective perspective. However, it needs to be emphasized that offshore wind farm siting procedures are not merely of a technical perspective. This is due to the fact that both the communicative and technical extremes display rather theoretical considerations (cf. Roo 2007: 111). From a planning perspective it indeed appears reasonable that neither the mere technical rationale nor solely a relativistic, communicative perspective can culminate in an actually applicable approach.

This circumstance can be illustrated by addressing potentially influential factors of an offshore wind farm siting process. Concretely the case of the offshore wind farm ‘Butendiek’ is used as means of exemplification. In this particular case, the NABU (Nature and Biodiversity Conservation Union) sued against the erection of the wind farm. It found numerous violations against the valid nature protection laws in the notifications of permission (cf. NABU 2014). As this example of a present dispute underlines, using a blueprint for the planning approach of

an offshore wind energy project can be unrewarding. It consequently reveals necessary to utilize a tailor-made and well-balanced strategy in order to succeed with a particular planning project.

Concluding this understanding, none of the extremes of the contemporary planning spectrum can claim ultimate correctness solely for itself. It is stressed that an interference of both the technical and the communicative sides is rather likely to result in a feasible planning approach. The review of ZUIDEMA's explanations on balancing between available planning approaches underlines this awareness (cf. 2011: 89). In connection with the exhibition it reveals that 'Fascination Offshore' displays an instrument of the planning approach outlined above. It does not represent a planning method by its own. Rather the exhibition concept can be characterized as a strategy of the illustrated offshore wind energy planning approach. This is because it aims at supporting the social acceptance of offshore wind energy in Germany. Yet it is refrained from investigating elements that are possibly contained in the exhibition from the perspective of the contemporary planning spectrum. This is because the objective of this passage is to discuss the usefulness of applying this approach to the exhibition. Since additional gain for the assessment of 'Fascination Offshore' is expected from utilizing the planning spectrum, it is applied in passage 5.2.3.

2.5.3 Making sense of complex data

This passage continues with suggesting yet another approach for assessing 'Fascination Offshore' from broader perspectives in passage 5.2. It discusses the approach of information rich aggregation (hereafter: IRA). The approach is most frequently used in processes of informed decision-making (cf. e.g. SIJTSMA ET AL. 2011). Therefore it is commonly known for its application in multi-criteria-analyses or cost-benefit-analyses. However, also fields of application different from these two well-established ones exist. The IRA is therefore investigated for its applicability in an assessment of the exhibition.

The IRA approach displays an important methodological tool concerning evaluation research. The overall idea of the approach can be characterized as assessing the trade-offs between two basic criteria. These attributes are the information richness and the degree of compactness (cf. Figure 9). Several arguments for the need of weighting the information richness against the level of aggregation can be found in the literature (cf. e.g. ABSON ET AL. 2012). For this reason they are not further illustrated here.

Regarding 'Fascination Offshore' the information richness can be illuminated in the light of the target groups that the exhibition addresses. This is justified by underlining that the information-provision concept needs to take into account an appropriate level of input for its audience. Acknowledging this point, certain limitations on the aspect of information richness becomes apparent. Against this background, the second relevant aspect of the trade-off comes into existence. It is the degree of compactness, which represents the counterbalance for the information richness.

Concluding, it is the balancing act between these two basic criteria, which makes the IRA approach appear valuable also for the subsequent assessment of 'Fascination Offshore'. The discussion above demonstrated the usefulness of applying the IRA approach for addressing the question of an appropriate information richness applied in the exhibition.

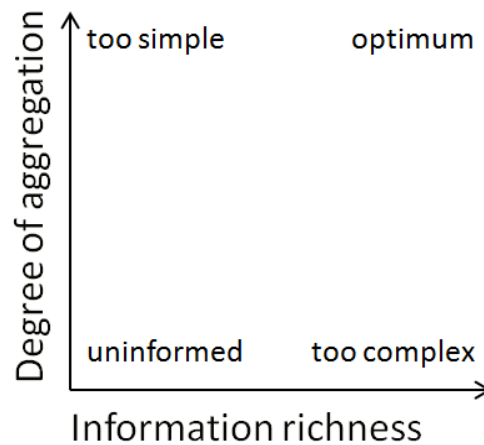


Figure 9: Weighting aggregation and information richness

(Source: own illustration; adapted from ABSON ET AL. 2012, FIG. 1)

2.5.4 Four components for forming social acceptance

The previous passages so far discussed three different concepts in terms of their applicability for assessing 'Fascination Offshore' from abstract perspectives. This passage introduces one further consideration that is deemed to be taken into account in the discussion part of this study. In their study RENN ET AL. (2014) state that four different aspects are relevant in order to generate social acceptance. The investigation was conducted in relation to renewable energy forms from the viewpoint of the *Energiewende*. Their deliberations are therefore also useful for the offshore wind energy-related considerations of this research.

In the attempt to enlarge acceptance of green planning projects, RENN ET AL. argue for a need to refer to 'understanding', 'self-efficacy', 'benefit' and 'identity' (RENN ET AL. 2014: 2). Additional emphasis is put on the circumstance that the four components need to be addressed in terms of information as well as communication strategies. The authors further underlined that the different levels, which a particular renewable planning project passes, need to approach these considerations. A brief introduction to each of the components is given in the following in order to allow for an understanding of their particular characteristics.

First, as soon as 'understanding' for an activity under dispute is present, acceptance is more likely to result. For the exhibition of the Foundation it is important to emphasize its information-provision component. 'Fascination Offshore' has the task to support social acceptance of offshore wind energy in Germany. As RENN ET AL. (2014) underline, the people affected by a renewable project need information about the planning process. Therefore it appears interesting to further discuss the role that 'Fascination Offshore' can take in supporting the component 'understanding'.

Second, 'self-efficacy' is addressed. RENN ET AL. (2014) argue that the individual's perception of having a stake in planning is likely to negatively influence the acceptance of renewables projects. This is because the more extensive the permission of 'powerholders' is shaped (cf. ARNSTEIN 1969), the more rejection can be expected (RENN ET AL. 2014: 2). Whether this phenomenon can be valuable in the light of the assessment of 'Fascination Offshore' is not yet determined.

As a third term the 'benefit' comes into existence and needs to be considered to the following extent. As the benefit rises for an individual or for a group, which is appreciated by a certain person, it becomes more likely that the support of a renewables project rises. In this connection RENN ET AL. (2014) emphasize the provision of information as a necessary prerequisite. It is further argued that the appraisal of the individuals' advantages or disadvantages resulting from a renewables project is solely assessable in case the affected is able to learn about his benefits (RENN ET AL 2014: 3). An affiliated evaluation in regard to the contribution that the present exhibition can make for the 'benefit' component therefore appears interesting.

The fourth term that should be striven for in order to reach social acceptance of a renewables planning project is named as the individual 'identity' with the certain project. It is to be assessed whether 'Fascination Offshore' adds to the consideration of the 'identity' aspect in regard to offshore wind planning projects in Germany.

The previous paragraphs allowed for a brief understanding of four different components. These are considered necessary for forming social acceptance in connection with renewables planning projects (cf. RENN ET AL. 2014). The research at hand investigates in the support of social acceptance of offshore wind energy in Germany by means of the exhibition concept of the Foundation. Therefore the outlined components are deemed valuable for assessing the exhibition 'Fascination Offshore'. It was however not yet determined whether all four considerations are beneficial for the overall evaluation of the exhibition.

2.6 Three main elements of interest

The content of the conducted desk research can be narrowed down to three main elements. These take a superior position in the present study and are distinguishable in the light of the research objective. This passage serves the aim to outline each of the essential components in order to underline its superior position. Passage 2.7 subsequently examines intersections and mismatches between the ascertained elements. In order to create a reasonable line of argumentation for analyzing overlapping and mismatching points among the three components, the sub-questions of this study are used. This structure helps to separately approach one sub-category of the main question at a time. Consequently, the investigation of mismatches and intersections of the main elements provides the basis for creating the research model (cf. passage 2.8) and the conceptual model (cf. passage 2.9) of the present research.

The first essential component of this research can be named as the exhibiting concept of 'Fascination Offshore'. It was initially characterized as an information-providing tool of the Foundation (cf. passage 2.2). Also it was outlined as a strategy to support social acceptance of offshore wind energy in Germany. Passage 2.5 discussed methods for assessing the exhibition concept from broader perspectives. This assessment of the exhibition concept is still to be conducted. Nevertheless the exhibition concept represents a main element of this study.

The objective of the first superior element is the support of social acceptance of offshore wind energy in Germany. The social acceptance, which was discussed in the literature review of passage 2.4, presents the second superior element of this research. The investigation in the realm of social acceptance revealed complex in the conducted literature review. A line of argumentation was hence developed in order to cover the aspects, which are considered important for the present research. This gave structure to the second main element.

It however became apparent that a mere specialist literature review does not offer appropriate understanding of the research objective. That is, the desk research could offer background knowledge to particular phenomena of social acceptance. To which degree the theoretical considerations meet the actual needs and concerns of the public in regard to offshore wind energy can however only be assessed after the empirical research (cf. chapter 4). Also particular differentiations of public viewpoints cannot be determined by the literature review. The empirical data, which demonstrates the interest of different stakeholders in regard to offshore wind energy, therefore represents the third superior element of this research.

In summary, three essential components were determined in this passage. They depict the superior elements of interest of the present research. The next passage builds on the detection of these components by investigating intersections and mismatches, which can be found between these components.

2.7 Approaching intersections and mismatches

This passage focuses on the extraction of overlapping and mismatching points between the three superior topics of interest determined in passage 2.6. Structure is given to the following analysis by using the three sub-questions of this research. Due to the limited extent of this study it is however not possible to consider all intersections and differences that may exist between these superior elements.

The investigation on mismatches and intersections is opened with recalling the first sub-question: *Which factors have an influence on the social acceptance of offshore wind energy in Germany?* Against this background, the Foundation states that ‘the main problem concerning their [offshore wind energy’s; annotation, AE] acceptance is a lack of information’ (ALBRECHT ET AL. 2013: 14). The provision of information represents the crucial aspect of the exhibition concept of ‘Fascination Offshore’. The desk research however revealed that that a greater variety of different aspects interlink for forming social acceptance of offshore wind energy. This demonstrates a mismatch between the literature review and the exhibition concept as intended by the Foundation. Acknowledging this mismatch, the empirical research appears important for addressing the first sub-question. This especially applies to the quantitative inquiries. This is because the mere literature review does not allow for ascertaining the parameters, which are in fact important regarding sub-question one.

Regarding sub-question one, the exhibition concept can additionally be assessed from a broader perspective. For evaluating the ability of the exhibition to do explanatory work on offshore wind energy in Germany to the interested public, the IRA approach is deemed valuable. This is because the IRA approach allows assessing how far ‘Fascination Offshore’ communicates specific information, which is considered important by the visitors of the exhibition. The IRA approach is therefore considered as beneficial for answering sub-question one.

The second sub-question is recalled as: *Under which conditions can a provision of information as executed in the case of the exhibition ‘Fascination Offshore’ help to support social acceptance of offshore wind energy in Germany?* Critical remarks such as ‘although there is nothing wrong with the idea to improve public knowledge about renewables, this will not simply change attitudes’ can be found in the literature (WOLSINK 2007: 1193). WOLSINK’S (2007) quote can be considered in place of the general recognition on the usefulness of critically reflecting on information provision tools. In this study, ‘Fascination Offshore’ displays the information-

providing instrument under investigation. To ascertain the conditions for an effective exhibition concept needs to take the environment of 'Fascination Offshore' into consideration, in which it is applied. Here, it appears valuable to take the knowledge gained from the literature review of passage 2.4 into consideration. It can provide the comprehensive basis for approaching sub-question two. At this point of the discussion, a mismatch between the three superior elements becomes apparent. That is, the visitor feedback on 'Fascination Offshore' is considered less valuable for answering sub-question two. This is underlined with the argument that the visitors represent the target environment that the exhibition is conceptualized for. Thus it is unlikely to gain valuable knowledge from the quantitative data with regard to sub-question two. Whether the expert interviews add further impulses to sub-question two cannot be determined yet. Consequently the theoretical element and possibly the qualitative empirical component form the causal basis for evaluating the usefulness of the third component, the exhibiting concept. This is why the three main elements of interest cannot be considered equivalently in order to create a meaningful assessment of sub-question two.

The application of an abstract approach is also valuable for answering the second sub-question. Here, ARNSTEIN's ladder of participation is deemed to be beneficial for the assessment of 'Fascination Offshore'. Initially, the participation model was introduced for classifying the exhibition concept from a participation level perspective (cf. passage 2.5.1). In the subsequent assessment of the exhibition it is intended to investigate whether the conducted grouping of 'Fascination Offshore' should remain in its initial classification. In other words, it is assessed if a transfer of the exhibition concept would be beneficial for its objective.

The third sub-question can be recalled as: *Which advantages and which disadvantages does the format of the present exhibition of the Foundation have for supporting social acceptance of offshore wind energy in Germany?* In order to approach sub-question three in a structured manner, a SWOT-analysis is conducted. It displays a comprehensible answer to sub-question three. Here, a mismatch between the two types of empirical research (cf. passage 3.4) becomes apparent with regard to sub-question three. The semi-structured expert interviews can be considered as beneficial sources of knowledge for conducting the SWOT-analysis. This is underlined with the different fields of expertise that the interviewed experts belong to (cf. passage 3.6.2). The variety of specialist background thus allows for diverse viewpoints on sub-question three. On the contrary, the SWOT-analysis can hardly benefit from quantitative visitor feedback. This is justifiable since the exhibition intends to do explanatory work addressing these visitors. Against this background no additional knowledge acquisition is expected from the inquiries, which are collected from the target group of the exhibition. Rather the expert interviews are likely to be useful for addressing sub-question three.

Also for sub-question three, an abstract approach is utilized. For broadening the viewpoint of the evaluation of the exhibition with regard to the third sub-question, the contemporary planning spectrum is used. This concept was initially outlined for assessing the German offshore wind planning approach (cf. passage 2.5.2). The exhibition itself was classified as a strategy of this particular approach with the aim to support the appendant social acceptance. In the light of the SWOT-analysis, the application of the planning spectrum aims at evaluating whether certain elements of the planning spectrum can be adapted to 'Fascination Offshore'. This approach hence allows for an understanding of a potential prospective positioning of the exhibition concept.

Preliminary summary

The previous explanations illustrated the course of action for approaching the sub-questions of the present research. The applicability of the three superior elements of this research was examined for the sub-question. In this regard also the benefit of merging different sources of information was demonstrated. Additionally, the abstract concepts, which were introduced in passage 2.5, were connected with the sub-questions. Their applicability for the particular sub-questions was moreover justified. To take the next step towards approaching the main research question, the research model of this study is outlined in the following passage. It is deduced from the explanations that were given in this section. The research model visualizes the complex structure of approaching the sub-questions as discussed in this passage. Moreover it displays the central element of the conceptual model, which is subsequently created in passage 2.9.

2.8 Research model

The previous passage introduced three specific strategies in order to approach the sub-questions of the present research. Each strategy suggested particular data sources for checking the initial point of the sub-questions. Additionally an abstracted tool was ascribed to every sub-question. They serve the aim to broaden the perspective of the conducted investigation. By addressing each sub-question with the help of the ascertained strategies, the main research question ultimately becomes approachable from a well-considered basis.

Figure 10 illustrates the explanations of passage 2.7. The visualization aims at increasing the understanding of the line of argumentation, which was created in the previous passage. The research model applies a consistent colour scheme for outlining the different levels in the working process.

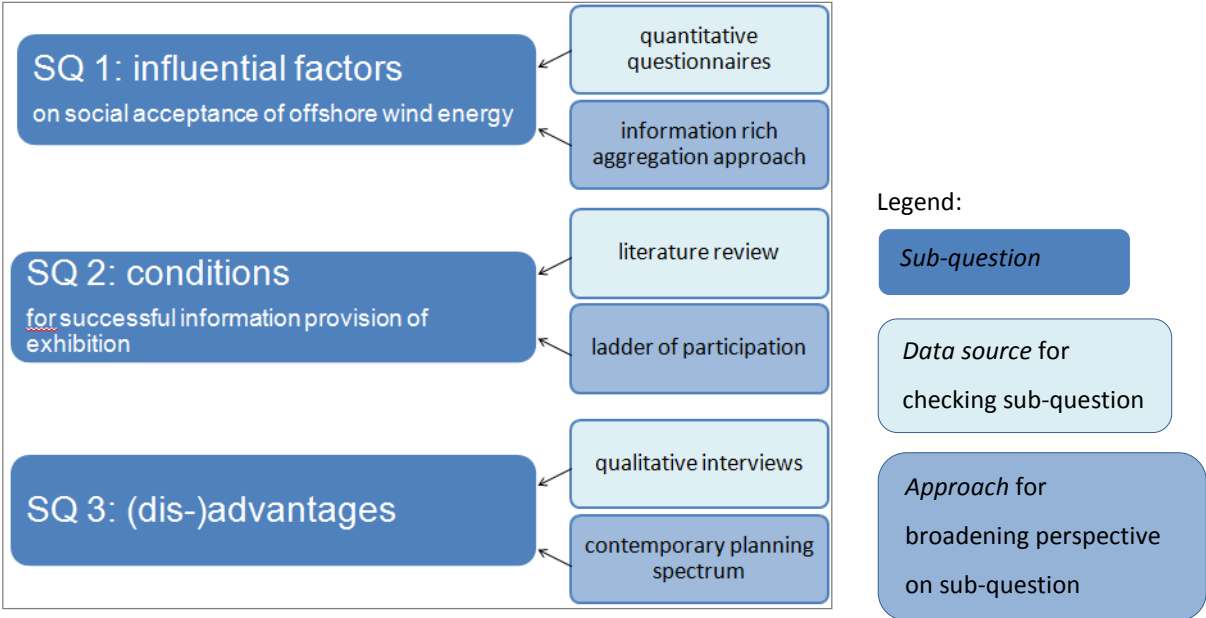


Figure 10: Research model
(Source: own illustration)

2.9 Conceptual model

The present study aims at analyzing the potential of the exhibition 'Fascination Offshore' to support social acceptance of offshore wind energy in Germany. A conceptual model is beneficial for outlining the procedural steps by which the understanding of the main research question is gained (cf. BURZAN 2008: 12).

The conceptual model of this research is subdivided into two main parts as regards content (cf. Figure 11). The upper box comprises the status quo of social acceptance of offshore wind energy in Germany. Also it outlines the introduction to the exhibition under investigation. The dotted box on the right-hand side indicates the means by which an understanding of the status quo is gained. The lower left box visualizes the steps that are included in the research process. The research process itself aims at answering the main research question.

As the initial step of the research phase, knowledge acquisition results from the empirical research. The acquired knowledge is counter-checked with the help of the available data sources. The knowledge sources enable answering the research sub-questions by applying the research model (cf. Figure 10). The discussion of the research sub-questions then paves the way for answering the main research question. Based on the gained understanding, 'Fascination Offshore' can be positioned in its detected environment. Figure 11 consequently visualizes how an evaluation of the potential of the exhibition to support social acceptance of offshore wind energy in Germany is stepwise conducted.

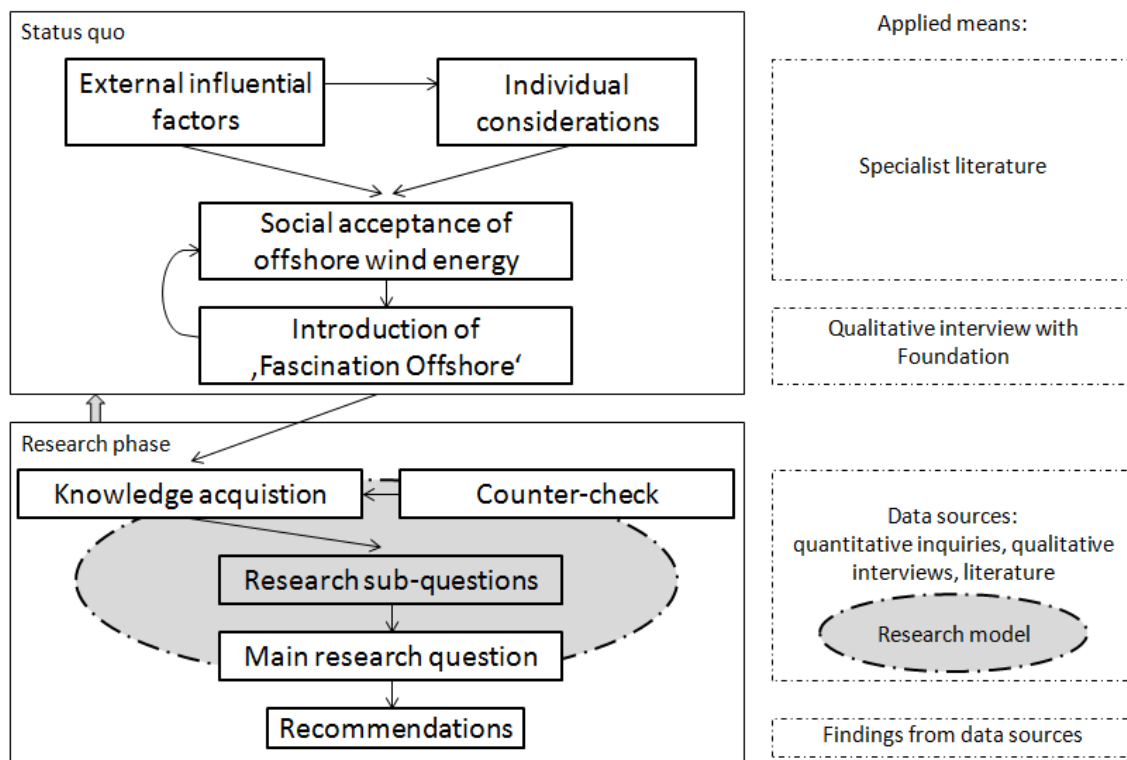


Figure 11: Conceptual model

(Source: own illustration)

The illustration of the conceptual model displays the last working step of the desk research. The next chapter continues with the explanations on the methodology applied in this study. Determining the utilized methods displays a necessary prerequisite for the subsequent empirical research and the appendant discussion.

3 Methodology

In order to be able to approach the main research question of this study, a comprehensive literature review has been conducted in chapter 2. Subsequently the methodology, which is applied during the further research, is introduced in this chapter. First, it is outlined how the empirical research is integrated in the overall research context. In the following, the applied research design is explained. In a next step, the framework conditions for verbalizing research hypotheses are explained. Afterwards, the hypotheses of the present study are phrased. Subsequently the methods applied for the empirical research are ascertained. Within this section, both the quantitative and qualitative research forms are explained. This is because the methods are of a twofold character. The subsequent in-depth explanations for both methods are concluded by the justification for a mixed use of both forms. This is followed by an introduction to potential limitations of the methodology for achieving 'true' statements with regard to the research objective. The sampling methods for the qualitative and quantitative questionnaires differ from each other. Therefore both approaches for selecting interview partners are illustrated in a next step. Subsequently the structure of the questionnaires and guidelines in use are outlined. Afterwards the realization of the interviews and surveys is explained. This chapter is then concluded by an outlook on how information from the empirical data is extracted in the data analysis of chapter 4.

3.1 Integrating the empirical research in the overall research context

The review of specialist literature forms one important pillar of knowledge for approaching the main research question. Additional to that, the empirical research represents a further source of information. For illustrating the usefulness of applying empirical research in this study, it is pointed at the research sub-questions. They separately address specific aspects of the main research question. This is necessitated by the internal complexity of the main research question. The systematic strategy for answering the sub-questions is displayed in the research model by visualizing the different working steps (cf. passage 2.8). The research model makes use of the available sources of knowledge. Since the empirical findings represent a part of these knowledge sources, they can be named as an essential component of the research model as well.

In addition to using the available knowledge sources, each sub-question is approached by an abstract concept in the research model. Discussing the sub-questions from broader perspectives further contributes to the subsequent positioning of 'Fascination Offshore'. This consideration leads over to the scope of the conceptual model (cf. passage 2.9). The conceptual model provides the understanding of how the empirical research is integrated in the overall investigation of the present study. This is because the different working steps of the research model contribute to incorporating the empirical findings in the research context.

In conclusion, the research model displays the core of the procedural steps of the conceptual model. From this awareness also the understanding results that the empirical findings display an integrated part of the conceptual model. This passage hence justified the use of empirical research for this study by underlining the value of the empirical findings for approaching the main research question.

3.2 Research design

For setting up the research design, literature from ATTESLANDER (2010), SCHNELL ET AL. (2011), PAIER (2010) and BURZAN (2008) is used for the main part. BURZAN (2008) initially emphasizes a disambiguation of relevant terms in order to be able to conduct a research (cf. 2008: 12). ATTESLANDER additionally underlines the need for creating a common basis for comprehension (cf. 2010: 41). This requirement was paid attention to in the desk research (cf. chapter 2). Therefore it is refrained from revisiting the disambiguation of relevant terms in the context of the methodological discourse again.

The authors further describe the operationalization of theoretical concepts. This requirement is approached by the so-called research design. A research design needs to be addressed in the methodology of a research. It helps to systematically examine research hypotheses by means of empirical investigation (cf. ATTESLANDER 2010: 49). This reveals important against the fact that the validation of hypotheses depicts one of the main aspects of empirical social research (cf. O'LEARY 2004: 36). The hypothetically supposed relations of the research hypotheses occur by means of observation. Accordingly also SCHNELL ET AL. (2011) argue for the necessity of outlining a research design (2011: 201). By utilizing a research design, the degree of certainty concerning the association of at least two incidences can be constituted. At this point it however needs to be stressed that the emerging questions of 'when, where, how and how often' can only be influenced to a certain degree by the researcher (cf. *ibid.*: 201). This is due to the number of restrictions, which are present for the applied methodology (cf. passage 3.5).

In general, a research design can be classified in a twofold way. On the one hand a grouping is possible by the point of time at which the reference groups are defined. On the other hand the modus can be taken into consideration as a decision feature. In respect of the quantitative research at hand the comparison groups can be defined as those individuals who either object or support offshore wind energy in Germany. Their individual tendencies for or against offshore wind energy are not identifiable prior to conducting the surveys though (cf. PAIER 2010: 33). For this reason the applied research design can be named as an *ex-post-facto* design. Due to the given financial and temporal restrictions of this research, the data acquisition is moreover organized as a cross section design. This type is also known as a one-shot survey design. It is applied for both the qualitative and quantitative data acquisition of this research (cf. PAIER 2010: 43).

3.3 Research hypotheses

Generating research hypotheses displays the initial point of empirical knowledge acquisition (cf. e.g. RAAB ET AL. 2009; in LAAS 2011; O'LEARY 2004: 36). This is why the formulation of potential correlations between at least two different attributes is conducted prior to the empirical research (cf. SCHNELL ET AL. 2011: 49). According to KROMREY (2006) hypotheses need to fulfill the general requirement of being falsifiable (2009: 40). Also they must not contradict each other. With regard to the knowledge gained from the literature review, hypotheses can be derived as conditionally verbalized theoretical statements (cf. O'LEARY 2004: 36-37). By implication those explanations mean that the so-called dependent variable is influenced by the sum of the independent variables (cf. e.g. JÖRESKOG and SÖRBOM, 1993; In: WOLSINK, 2007: 1195, Figure 1). Research hypotheses therefore describe potential connections between dependent and independent variables.

The research hypotheses of this study are formulated in a way which is not too specific. By those means it is aimed at maintaining the possibility to assign their results to objects, which are not directly covered by the research hypotheses themselves (cf. e.g. KROMREY 2006: 29). A certain level of retrospective generalization of the hypothesis thus remains possible. At the same time, however, the hypotheses are designed to serve the criteria of being sufficiently exact. By doing so, it is attempted to test them within the framework of this study (cf. e.g. KROMREY 2006: 40). In this connection an important awareness is underlined by BURZAN (2005). According to present scientific knowledge, research hypotheses cannot be verified. This can be argued for with the fact that it is impossible to investigate in all possible cases concerning a hypothesis. Rather a hypothesis can be assumed to be valid as long as it is not proven differently (cf. BURZAN 2005: 24). On the contrary, however, a falsification of research hypotheses only needs the detection of one contradicting case.

Based on the testing of the research hypotheses it subsequently becomes possible to address the research sub-questions. Concluding, research hypotheses display tools for ultimately approaching the main research question (cf. SCHNELL ET AL. 2011: 49). Deduced from the conducted literature review, the following research hypotheses are verbalized as hypothetically assumed correlations for the present research:

Hypothesis 1, in regard to the geographical distinction of social acceptance:

The social acceptance of offshore wind energy is subject to a spatial distribution. Since the discussion of offshore wind energy is less present in central and southern Germany than in the northern coastal regions, a north-south divide of the social acceptance of offshore wind energy is detectable in Germany.

Hypothesis 2, in regard to the attendance of the exhibition and a positive attitude on offshore wind energy:

People who have visited the exhibition 'Fascination Offshore' have a positive attitude towards offshore wind energy in Germany.

3.4 Ascertainment of methods

Empirical findings were already determined as an essential source of knowledge for the present research (cf. passage 3.1). The appendant explanations on the methods, which are applied for collecting the empirical data, are subject to this section. SCHNELL ET AL. (2011) state that inquiries display one method of quantitative data collection (cf. 2011: 313). Additionally, questionnaires represent the most frequently used survey technique. Further arguments for their application can be found in the literature (cf. e.g. PAIER 2010: 95). Also in passage 3.4.1 it is argued for the use of inquiries as the quantitative data acquisition form in this study. Passage 3.4.2 subsequently contains explanations for choosing expert interviews as the qualitative research method.

3.4.1 Quantitative research

The surveys conducted within the frame of 'Fascination Offshore' display a voluntary written questioning of the visitors (cf. SCHNELL ET AL. 2011: 352). In contrast to the former exhibition of the Foundation the current one does not feature a touch screen-based data collection approach. It represents a pen-and-paper version of the quantitative interview type. The overall structure of the questionnaire of the current exhibition in large parts borrowed from the previous one. As a result, the style of the inquiries was predefined prior to the investigation

at hand. Furthermore parts of the conducted written inquiries were already collected when this study was initiated. Consequently, not only primary data exists for the quantitative research of the present study.

Acknowledging this predefinition of the questionnaire, also the range of possible answers from the visitors appears limited. For this reason a modification of the existing survey is conducted (cf. passage 3.7). First, the questions with predefined answer choices are expanded by open questions (cf. SCHNELL ET AL. 2011: 326). By those means it is attempted to acquire more comprehensive answers than they would result from solely ticking answers. The target of more comprehensive answers also leads to a second modification of the questionnaire. This modification is conditioned by the presence of the researcher at some of the exhibition's locations. The quantitative inquiries are supplemented by face-to-face interviews (cf. e.g. O'LEARY 2004: 183). These interviews remain quantitative in their style but allow for more comprehensive insights in the arguments and attitudes of the interviewed. For the face-to-face interviews, the researcher takes notes on the key words of the particular conversations. For the sake of internal comparability, the overall structure of the modified questionnaire is maintained also for the face-to-face interviews.

In a next step, benefits and disadvantages of the quantitative data collection methods are illuminated. Quantitative written questionnaires imply the advantage of comparatively smaller financial and organizational expenditures (cf. SCHNELL ET AL. 2011: 351). Exemplarily this means that administrative efforts for personal interviews increase with the number of interviews conducted. On the contrary, the expenses of pen-and-paper surveys remain constant even when increasing the number of questionnaires. A methodological advantage of written inquiries can be named as their equal structure (cf. e.g. BURZAN 2008: 12; WOLF 2008: 31). The similar composition one to another allows conducting the interviews in a formalized manner. This aspect further underlines the possibility of internally comparing the surveys retrospectively. SCHNELL ET AL. (2011) furthermore list the avoidance of mistakes on the part of the questioning person as particular strengths of written questionnaires (cf. 2011: 351). Also the preservation of the interviewee's anonymity represents an advantage of written surveys. Additionally SCHNELL ET AL. (2011) state that answers are more honest and well-considered in written interviews (ibid.). This characteristic also results from the absence of a questioning person. Altogether a number of contextual and methodological strengths accompany the written questionnaires in use.

For the face-to-face interviews, the anonymity of the particular interviewee is still assured retrospectively. However, the personal interviews are likely to lack some of the advantages, which apply for the written inquiries (cf. also SCHNELL ET AL. 2011: 346). Nevertheless the personal interviews are not expected to do significant harm to the matchableness of the quantitative data acquisition. This is underlined by maintaining the overall structure of the inquiries (cf. e.g. O'LEARY 2004: 164). The additional design of open questions further allows for the creation of a more fluent dialogue (cf. O'LEARY 2004: 163). The interviewee is thus able to underline his predefined answer choice by individual explanations in the face-to-face conversations. Also it is stressed that the face-to-face inquiries remain voluntary.

Besides the illustrated advantages of the quantitative data acquisition forms, also weaknesses exist. SCHNELL ET AL. (2011) for example quote a higher rate of failures of postal inquiries in comparison to personal interviews (cf. 2011: 352). For the written interviews this default rate is likely to be comparably high. The assumption can

be underlined by the fact that the present questionnaires also represent voluntary offerings. This demonstrates a consistency with the feedback of postal inquiries. Another weakness is that the visitors, who are willing to give feedback, cannot be controlled in terms of the sincerity by which the questions are answered. Also potential external influences, which could affect the given answers, cannot be determined (cf. Stocké 2004: 304-305). Additionally, the prescribed structure of the questionnaires on display can be considered as a severe limitation to quantitative surveys in general. Due to the dominating polar character of the questions, reactions of the interviewee become constrained to predetermined answers (cf. SCHNELL ET AL. 2011: 352). As a consequence those standardized questionnaires presumably reduce the information content of an obtained answer. This latter restriction is aimed to be counteracted by additionally conducting face-to-face interviews.

3.4.2 Qualitative research

Qualitative empirical research is often conducted with guided interviews (cf. O'LEARY 2004: 164). SCHNELL ET AL. (2011: 379) describe semi-structured interviews as one special type of inquiry. It comprises the possibility to analyze elements including relevant, extreme or salient values (cf. FRIEDRICHS 1973; In: SCHNELL ET AL. 2011: 379). Guided interviews display comparably open dialogues. They offer the possibility to the interviewee to answer in a less restricted frame than it is the case with quantitative surveys. A further advantage of the guided interview type can be named as a more natural flow of conversation (cf. WOLF 2008: 32; O'LEARY 2004: 168). Also spontaneous action on the part of the interviewing person becomes possible in semi-structured interviews (cf. O'LEARY 2004: 162). Due to these advantages it is more likely to capture a bigger variety of background information as well as experience of the interviewee (cf. WOLF 2008: 25). These inputs would be harder to gain within the restricted questioning patterns of quantitative surveys (cf. BURZAN 2008: 12). On account of these advantages, semi-structured interviews are used as the qualitative data acquisition form in this study. The semi-structured conversations are conducted as expert interviews. In the light of the interviewees' professional knowledge, the qualitative empirical research appears valuable for the main objective of this study.

Besides the mentioned benefits, also disadvantages of the semi-structured interview type exist (cf. WOLF 2008: 26ff.). Shortcomings can be ascribed to the wider frame of conversation in the guided talks. Also, semi-structured interviews require higher interview skills on the part of the interviewer. This means that the interviewing person has to be prepared to act spontaneously (cf. WOLF 2008: 31). At the same time he also has to guide the dialogue in a way that all relevant questions are addressed in the end. This circumstance may reveal complex. It for instance highly depends on the interviewer's skills and the interviewee's willingness to share information (cf. O'LEARY 2004: 162 ff.). Moreover a relatively free interview form claims for specific documentation methods (cf. O'LEARY 2004: 169). An absence of precise documentation methods would lead to a lack of comparability of the semi-structured expert interviews. Such critical considerations on qualitative interviews are among others addressed by FLICK (1991). In the present case, taking key words would not allow for a precise review of a conducted expert interview at a later point of time. For taking this fact into consideration, every interview of the present research is recorded and transcribed.

For being able to subsequently draw conclusions from the qualitative empirical research, the aspect of comparability needs to be taken into consideration. After all, the comparability of semi-structured interviews is

only possible at a rather elementary level (cf. SCHNELL ET AL. 2011: 379). Also, the guided interviews in the present research do not seek for representativity (cf. WOLF 2008: 27). This is because the predefined financial and temporal constraints of this thesis do not allow so. Bias would be likely to result from the restricted amount of conducted interviews. This is why it is refrained from aiming to draw a representative sampling picture by means of the qualitative interviews. Rather, experts are selected with regard to their contentual relevance in the light of the present research objective. Explicit explanations on the sampling process of the interviewed experts are subject to passage 3.6.2. Before, the mixed use of qualitative and quantitative empirical research is justified in the next passage.

3.4.3 Justification of applied methods

The discussion of the data acquisition forms of the previous section results in the following awareness. A mixed application of both empirical data generation types can help reducing the specific limitations of each method. By supplementing each other, the empirical research methods allow approaching the main research objective from more comprehensive perspectives. The same argumentation applies for the research sub-questions. In light of the discussion of passage 2.7, the mixed use of the empirical research methods appears reasonable. By combining both data collection forms, a well-considered empirical basis for the present research is created.

3.5 Limitations of applied methodology

Amounts and types of limitations, which potentially go along with a research method, can vary among particular studies. Depending on the aim of a study also its methodology needs to be adapted. Due to concrete requirements of a particular research, related parameters can differ in their characteristics as well. Applying a tailor-made methodological strategy helps achieving an optimal output under the given restrictions of a study.

The explanations of the present chapter make clear that a number of methodological decisions have to be taken in this study. Such considerations take place between different possibilities. Those need to be well-considered for achieving meaningful results. Decision-making is however also accompanied by particular weaknesses of the chosen methods.

Exemplarily the research design, which is applied for the present research, can be named (cf. passage 3.2). Due to the financial and temporal constraints of this thesis, the applied research design only displays a snapshot in time. As a consequence, potential time-wise fluctuations cannot be captured by the empirical work of the present research. This example acts in place of a number of parameters, which can potentially put limitations to the results of the present research. In passage 5.6 it is additionally reflected on limitations to the generalizability of the results of this study.

Acknowledging the limitations of the present methodology, this study can still contribute to the discussion on social acceptance of offshore wind energy in Germany. In this passage, the researcher acknowledged the limitation of the meaningfulness of her results, which is due to methodological restrictions. Against this background, understanding can still be added to the investigation of the potential of 'Fascination Offshore' to support social acceptance of offshore wind energy in Germany.

3.6 Sampling methods

3.6.1 Sampling in quantitative surveys

In the case of the quantitative data acquisition, the researcher has only a limited influence on the sampling method. This is mostly due to the concept of the exhibition. 'Fascination Offshore' is designed to be presented without a supervision of staff. The quantitative data inquiries are at display openly at the exhibition locations. By those means the Foundation offers questionnaires for feedback on a voluntary and anonymous basis. As a consequence it is not possible to influence whether or not people participate in the written evaluation of the exhibition. As a general awareness it was found that the current exhibition 'Fascination Offshore' experiences comparably less voluntary feedback than the exhibition on the MS Greundiek did.

For this reason the researcher targets for being present at the locations as much as possible. Her presence is restricted by the available financial and temporal resources. Through the presence of the researcher, it is intended to gather further feedback by conducting face-to-face interviews. No further selection of potential interview partners is carried out for these personal interviews. Instead, every visitor who occupied himself with the exhibited material is aimed to be asked to participate in the survey. By those means the interviews remain voluntary. Also, the anonymity of the interviewees is assured by coding the questionnaires retrospectively.

3.6.2 Sampling in qualitative interviews

The procedure of choosing interview partners is different in the qualitative data acquisition case. The qualitative research of this thesis aims at the analysis of comparably few cases. They are selected under the prerequisites of adding relevant information from specialist perspectives to the research objective. For this reason it is refrained from interviewing visitors of the exhibition in-depth, but conducting expert interviews. Due to the constraints of this thesis, only a limited number of semi-structured interviews can be conducted. It becomes clear that statistical representativity of the appendant findings is neither realistic nor striven for.

Still, the qualitative research contributes to the assessment of the potential of 'Fascination Offshore' to support social acceptance of offshore wind energy in Germany. For this reason it is considered most appropriate to sample the experts for the interviews by using specified criteria. Table 1 illustrates the check-list of subjects, which are deemed important for an initial pre-selection of potentially relevant interview partners. The listed aspects take the knowledge into account, which was gained in the literature review (cf. chapter 2).

Determined topics of interest	Degree of presumed knowledge gain by interviewee (high, medium, low)
Social acceptance of offshore wind energy	
Role of information for social acceptance	
Dimensions of social acceptance	
Social resistance	
North-south divide	

NIMBY-syndrome		
Dynamic character of social acceptance		
Experience in the fields of	Information brokering	
	Exhibition concepts	
	Visitor feedback	

Table 1: Check-list for pre-selecting potential interview partners

The check-list in Table 1 provides indications for assessing an expert's importance in the light of the research objective. The table thus displays a tool for examining an interviewee's knowledge concerning the acquisition of aspects, which are interesting for this study. Subsequently to these explanations on contentwise criteria, it is continued with outlining the sampling process itself. Here, a variety of different qualitative sampling methods exist (cf. e.g. SCHNELL ET AL. 2011: 294). Each of the approaches is connected to particular advantages and limitations. With the help of the semi-structured interviews it is aimed at accomplishing a reasonable coverage of important aspects in the face of the main research question. In this attempt to achieve a maximum knowledge acquisition under the given circumstances, a conscious sampling method is required.

In the process of naming potential dialogue partners for the expert interviews, it is initially focused on the hosts of 'Fascination Offshore' (cf. Appendix (1)). The exhibition partner's relevance can be assessed on the basis of the check-list (cf. Table 1). Potentially valuable interview partners are extracted by those means. In a next step a classification is performed for grouping the pre-selection of experts (cf. Table 2). This procedure reveals necessary due to the different fields of expertise that the particular partners belong to. In other words, none of the potential interviewees has in-depth knowledge on all topics of interest determined in Table 1.

Table 2 demonstrates the classification concept, which is used to group the pre-selected interview partners. On the one hand it groups the experts concerning their embeddedness in offshore wind energy. On the other it classifies the selection according to the existence of an own exhibition concept on the part of the experts.

No exhibition & offshore branch	Exhibition & offshore branch
No exhibition & not offshore branch	Exhibition & not offshore branch

Table 2: Classification of potential interview partners

In a next step, the identified partners of the exhibition are assigned to the classification of Table 2. Each potential interview partner of this pre-selection is subsequently requested for an expert interview. The exhibition tours contemporaneously to the conducted research. Therefore it is not possible to take the final amount of participating locations into consideration after all. This can be justified with the site acquisition that represents a continuous process of organization on the part of the Foundation. At the moment of conducting the present research, not all sites have thus been confirmed. Still it is attempted to take progress in the location acquisition into account.

After this pre-selection, the perspective is broadened in accordance with the Foundation's considerations on further valuable interview partners (cf. Appendix (7.2)). Concretely, cooperation partners and organizations, which are suggested by the Foundation, are additionally requested to participate in an expert interview. In total, nine positive answers result from the selection process. These experts are subsequently grouped according to the classification of Table 2 (cf. Appendix (2)). In conclusion, the so-called theoretical sampling is applied in order to select the experts for the semi-structured interviews (cf. HALBMAYER, E., SALAT, J. 2011: 3 Sampling). This sampling method is also known as conscious sampling (cf. SCHNELL ET AL. 2011: 292).

3.7 Structure of empirical methods applied

The structure of the questionnaires at display at the exhibition was already defined prior to the present research (cf. passage 3.4.1). Only a number of small-scale changes are conducted within the frame of this thesis. That is partially necessary due to minor mistakes in the statistic data ascertainment. The doubling of years of age within the gradation can be named as such a mistake. It is corrected in connection with the present thesis. The English translations of the former and the revised version of the questionnaires are displayed in the appendices (cf. Appendix (3), (4)). Therefore it is refrained from listing the quantity of conducted minor changes here. The same accounts for the open questions. They are added to the former questionnaires in order to stimulate more extensive answers in the face-to-face interviews (cf. Appendix (5)). Due to the extent of this passage it is refrained from repeating their listing here.

For the qualitative interviews it is aimed to shape the guiding questions of the particular interviews as close to each other as possible. This attempt takes account of the problem of internal comparability as addressed by SCHNELL ET AL. (2011). It however reveals from the classification of the interview partners that not all experts can be addressed with the same questions. That means that the subject areas cannot be covered to an equal extent in the frame of every dialogue. Still, within one particular grouping, the guiding questions are kept as close as possible to the initial guideline (cf. SCHNELL ET AL. 2011: 316, 379). A detailed outline on the interview contents is conducted in passage 4.2. Therefore it is refrained from outlining the specific questions here (cf. Table 5).

3.8 Realization of interviews

The quantitative data acquisition is carried out within the touring time of the exhibition 'Fascination Offshore'. As stressed in passage 3.6.2, it is also not possible to take the entire amount of locations of the exhibition into account for collecting quantitative feedback. Concretely, the questionnaires at display between 4st April 2013 and 6th October 2014 at the particular locations are taken into consideration. Fulfilling the requirement of being complete and answered sincerely, every response is considered. Additionally, between April and August 2014, face-to-face interviews are conducted by the researcher. The frequency of the personal interviews is limited by the availability of the researcher at the exhibition locations.

For the conducted qualitative interviews, the deadline for including potential interview partners into the selection process is limited by the simultaneity of the research and the exhibiting periods. That means that between May and September 2014 a total number of nine semi-structured interviews are conducted. Altogether 10 experts are interviewed. The differing numbers result from eight single interviews and one

coupled expert conversation. As already emphasized in passage 3.4.2, each interview is recorded and transcribed. This procedure allows for an exact review of the interviews in the data analysis (cf. passage 4.2).

3.9 Information extraction

In order to round off the explanations on the methodology of the present thesis, this passage gives final explanations on the applied strategies of information extraction. With regard to the qualitative expert interviews, Microsoft Office Word 2007 is used. The relevant information of the expert interviews is extracted from the transcripts. The transcripts themselves are produced from the interview recordings by using Word. Based on the transcripts, a table of analysis is created (cf. Appendix (6)). In-depth explanation on the composition of this table is subject to passage 4.2. For this reason it is not further explained here. The table of analysis is also produced by using Word. Based on this table, it subsequently becomes possible to approach the particular subject areas in the qualitative data analysis. With the help of Microsoft Office Word 2007, also the later discussion of the qualitative data can therefore be executed.

In terms of the quantitative inquiries, Microsoft Office Excel 2007 is used. Excel offers the possibility to systematically enter the collected data and subsequently analyze it according to the requirements of the data analysis. Therefore, also besides analyzing the statistical data, Excel meets the needs for approaching the main questions of the inquiries. That is, especially polar questions can be approached with the help of Excel. Furthermore Excel allows for specific visualizations with regard to the data analysis. For this reason Microsoft Office Excel 2007 is considered a useful tool for approaching the quantitative data, which is collected in the context of the exhibition 'Fascination Offshore'.

4 Field research

The previous chapter illustrated the methodology, which is applied for the empirical research of this study. The field research in a next step applies the explanations given in chapter 3 on the acquired data. That is, in the present chapter the empirical data is investigated. First, the acquired quantitative data is analyzed. This analysis is divided into two parts. The initial part consists of the analysis of the data collected by means of the written inquiries. Afterwards the conducted quantitative face-to-face interviews are examined. The second part of this chapter focuses on the qualitative data. The expert interviews are investigated in that section. The present chapter paves the way for discussing the empirical findings in chapter 5.

Both the quantitative and qualitative empirical research is introduced with outlining the appendant statistics. The data analysis is further supplemented with figures. The visualizations are used for illustrating purposes if appropriate. By those means it is aimed for creating a comprehensive analysis of the empirical data.

4.1 Quantitative data analysis

In chapter 3 the application of different questionnaires for the quantitative data collection was demonstrated. The specific forms were explained in passage 3.4.1. For this reason it is refrained from repeating the particular line of argumentation in the current passage. It is rather focused on clearly outlining the collected data. Presenting the results of the conducted surveys is performed in two steps. The first part focuses on the feedback obtained from the written inquiries, which are on display at the touring locations of 'Fascination Offshore' (cf. Appendices (3), (4)). The second part analyzes the conducted face-to-face interviews (cf. Appendix (5)). The quantitative interviews are performed to verify the reliability of the written answers.

4.1.1 Written inquiry data analysis

The written surveys consist out of a primary and a revised version (cf. Appendix (3), (4)). The revised version is initiated by paying attention to the criterion of retrospectively maintaining the internal comparability of the inquiries. That is, modifications are solely made provided that they do not harm the attribute of comparability among the questionnaires. The modified survey includes a number of six instead of the original four questions. The former questions are numbered as 1, 2, 5 and 6. The supplementary questions are 'Which topics do you find interesting in particular?' and 'Which aspects would you like to have more information on?'. They thematically connect to the second question. Therefore they are inserted after the second question.

Statistics

With regard to statistics, the following overview can be established. In the exhibition timeframe between 4th April 2013 and 6th October 2014 a total number of 161 inquiries are fully completed. Against the criterion of completeness, this number displays the main unit in the written quantitative data analysis. It is composed of 34% female and 66% male volunteering visitors. The age distribution of the total 161 considered inquiries is visualized in Figure 12. It reveals that the majority of participating visitors is between 18 and 30 years old (40.4%). The smallest group by age distribution represents the visitors between 31 and 45 years (8.7%). The remaining three distinguished classes of age have shares between 11.2% and 21.7% each.

Age distribution of participating visitors (n=161)

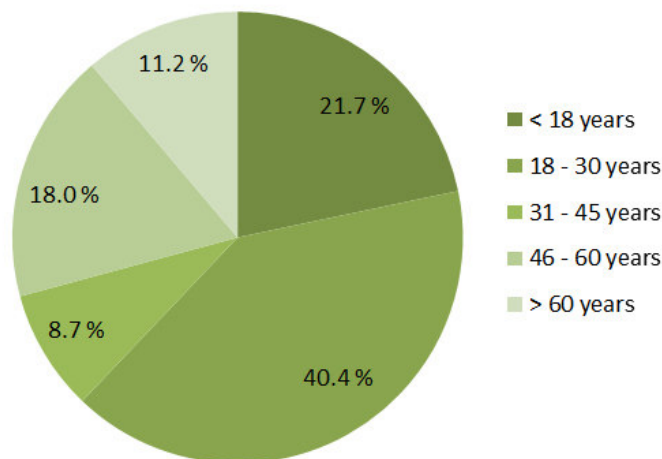


Figure 12: Age distribution of participating visitors [%]

Data analysis

Above, an initial investigation in the statistics belonging to the written questionnaires was conducted. In the following, the particular questions of the inquiries are investigated.

- Q1: How do you like the exhibition 'Fascination Offshore'?

A scale is prescribed for answering this question. It allows choices between 'very good', 'good', 'little liked' and 'dislike' (cf. Appendix (3)). The researcher is aware of the missing neutral option within the scale. It is argued that a neutral choice would not be valuable for the evaluation of the exhibition on the part of the visitors. For this reason also a balanced answer is missing in order to provoke a clear positioning. The distribution of answers is displayed in Figure 13. The majority of 89.4% of the visitors finds 'Fascination Offshore' (very) good. 10.6% disagrees with this viewpoint and states the exhibition to be either disliked or little liked.

Q1: Distribution of answers (n=161)

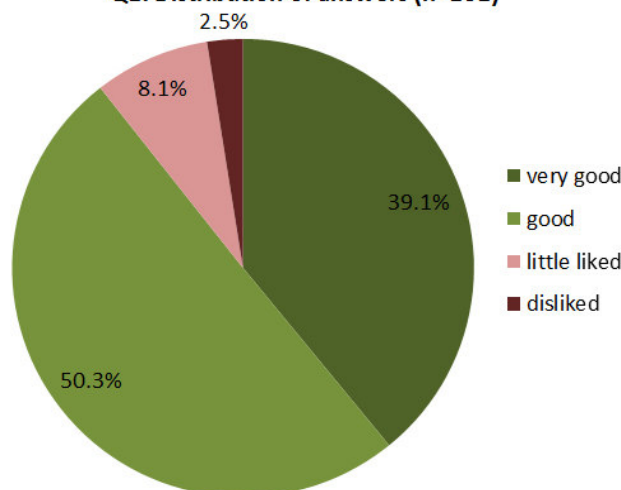


Figure 13: Q1 - Distribution of answers

- Q2: Is the content of the information boards understandable?

This question is requested to be answered by using a prescribed polar scale as well. In the original questionnaires the yes-no answers are supplemented by the option 'others'. The revised version refrains from further offering this neutral choice. In this respect it follows the same argumentation as explained for question 1. Instead of allowing a neutral decision on the part of the visitors, the modified questionnaire offers the possibility to explain a potentially negated answer. The quantitative data analysis however reveals that the additional room for explanation is only used in two cases. One appendant answer argues that the visitor does not live in a coastal region (48). The other answer merely states the content of the information boards to be idiotic (62). Figure 14 visualizes the distribution of the total amount of answers given for question 2. Among the 4.5% of negating answers, also the two explanations outlined above can be found. On the contrary, 90.3% of the visitors who give feedback on 'Fascination Offshore' find the content of the information boards understandable. Further 5.2% of the volunteering visitors do not take a position with regard to the second question. The existence of these neutral answers can be attributed to the answer scheme offered in the original questionnaire. In order to prevent distortion of the simultaneous analysis of the former and the modified questionnaires, the neutral answers are retained in the present analysis. Figure 14 demonstrates a total number of 154 answers on question 2. This amount differs from the main unit of 161 questionnaires. This results from the complete absence of decisions taken on the part of seven visitors. Since their missing choices do not offer further awareness on question 2, they are in total excluded from its analysis.

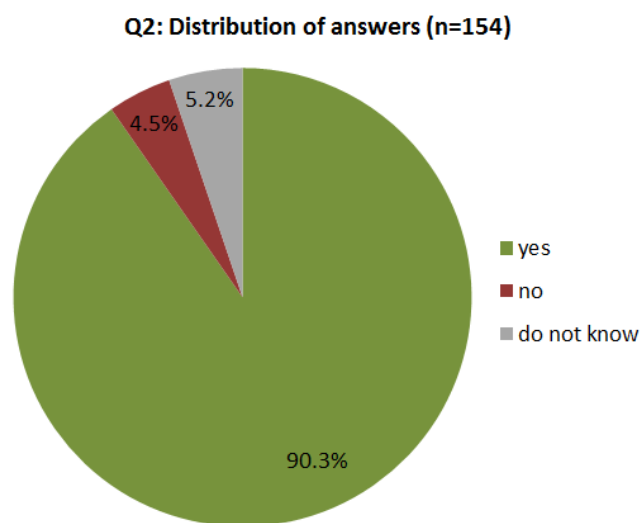


Figure 14: Q2 - Distribution of answers

The questions 3 and 4 display modified questions, which are applied only in the revised inquiry. They are included in the questionnaires from April 2014 on. This date displays the time when the researcher assumes the evaluation tool of 'Fascination Offshore'. By modifying the questionnaires it is deemed to obtain additional awareness to the knowledge, which is gained from the existing questions. This is why the questions 3 and 4 can only be answered by a smaller amount of visitors of 'Fascination Offshore'. Altogether the total amount of returned inquiries, which contains the questions 3 and 4, sums up to 59.

- Q3: Which topics do you find interesting in particular?

The answers to question 3 are expected to contain a big internal variety. Therefore possible topic areas are proposed to the visitors as answer choices. This structured offering is deemed to allow for a better retrospective comparability of the received answers. In case the suggestions do not meet the visitors' ideas, additional space for open answers is offered as well. The topics suggested as possible answers to question 3 are 'technics, dimensions', 'foundations', 'jobs', 'grid connection', 'costs, net value added', 'ecology' and 'expansion of offshore wind energy'. Multiple choices are possible. Figure 15 demonstrates the obtained answers to question 3. It reveals that the majority of total answers are selections of the proposed categories. Additional answers to the suggested categories are given in three further cases. These address the onshore wind energy development (5) as well as missing information on subsidies for renewable energy forms (30) and the erection of the plant, e.g. concerning fundamentals (24). In summary, the prior classification of potential answer choices allows for the creation of a structured overview. The semi-open question 3 can be considered as a meaningful source of information for the eventual discussion of the empirical research in chapter 5.

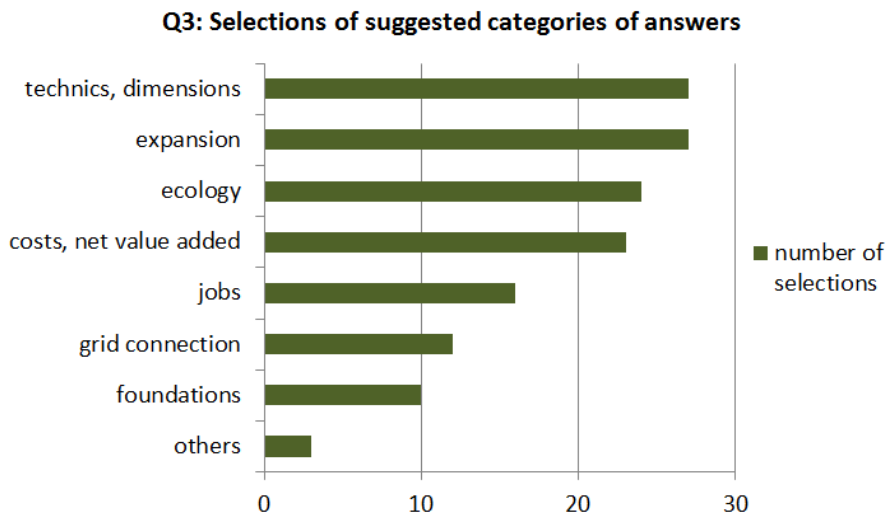


Figure 15: Q3 - Selection of suggested categories of answers

- Q4: Which aspects would you like to have more information on?

Question 4 displays the second modification that is added to the original questionnaire. It is designed as an open question since potential answers are not predictable. 17 visitors use the offered space to comment on subject areas, which they would like to have more information on. As one topic of interest further explanations on negative aspects accompanying offshore wind energy are demanded. More precisely, clarifications on technical difficulties (6) as well as on economic problems of the plants (3, 62) are specifically addressed. It is also asked for outlining alternatives for power production (4, 71) and comparing these possibilities to offshore wind energy (30). Moreover, the illustration of the actual energy demand of one wind power plant to be manufactured and erected is asked for (13). Further answers outline profound interest in the topics ecology, costs and grid connection with regard to offshore wind technology (14, 43, 52, 55). Moreover the role of the young industrial offshore branch is brought into question with regard to the future energy mix (16). It is also asked for addressing the topic of saving energy more in detail (47). One more comment demands the provision

of knowledge on floating wind power plants (21). Finally, further information adjusted for children is requested (42) and the current amount of information content is commended (35, 37).

- Q5: What is your opinion on offshore wind energy?

Question 5 again represents an original question. That is, it is already included in the former questionnaire and adopted in the modified version. The yes-no-question is supplemented by a neutral option in the original questionnaire. The revised version however refrains from including this choice for reasons already explained for question 1. The original offering to not take position in connection to question 5 results in a share of 10.6% of the visitors to answer 'do not know'. This percentage exceeds the proportion of 9.9% of the visitors answering that they have a negative opinion on offshore wind energy. As displayed in Figure 16, the remaining 79.5% of the participants state that they have a positive opinion regarding offshore wind energy.

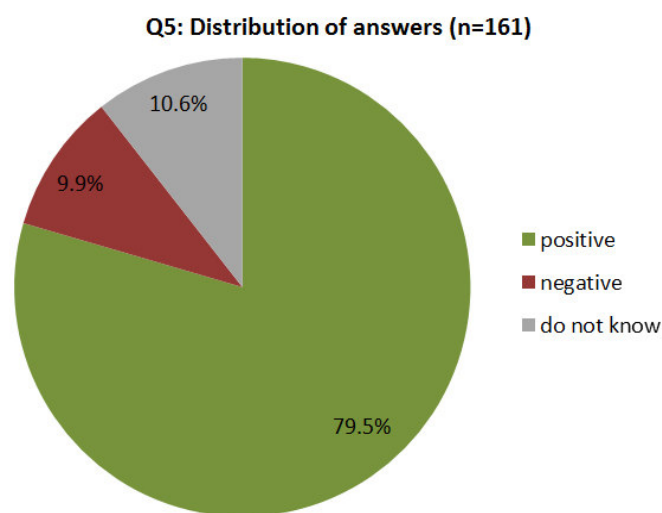


Figure 16: Q5 - Distribution of answers

- Q6: Did the exhibition 'Fascination Offshore' change your opinion?

This final question is contained in the original questionnaire as well as in the revised version. It basically displays a yes-no-question. It however furthermore includes two different choices for an affirming answer. Offering two 'yes' possibilities is important since the exhibition can potentially change opinions in a negative and a positive direction. For this reason one negating answer choice is supplemented by two 'yes' choices in question 6. The analysis of the inquiries reveals that the exhibition on the one hand changed the opinion of the participating visitors in 42.2% of the cases (cf. Figure 17). Out of this amount the majority of 39.7% states a positive influence of the exhibition on their opinion concerning offshore wind energy. The remaining proportion of 2.5% comments on 'Fascination Offshore' to have changed their attitude towards offshore wind energy in a negative way. On the other hand 57.8% of the visitors do not state a change in their opinions regarding offshore wind energy from visiting 'Fascination Offshore'. That is, they remain with their opinion, which was already demonstrated in question 5.

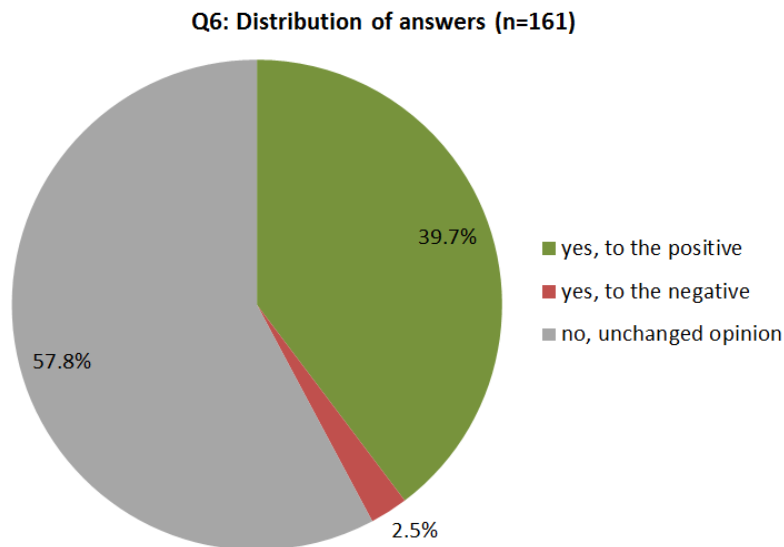


Figure 17: Q6 - Distribution of answers

4.1.2 Face-to-face interview data analysis

Additional to the inquiries offered to the visitors of 'Fascination Offshore', another form of quantitative data acquisition is applied. As already outlined in passage 3.4.1, the researcher conducts personal interviews at some of the exhibition locations. The personal interviews are in the first place performed to verify the responses from the written inquiries. Also, they represent more extensive compositions of the written questionnaires (cf. Appendix (5)). These compositions can be realized due to the flow of conversation, which evolves in personal interviews (cf. O'LEARY 2004: 168). For this reason the face-to-face interviews are likely to generate more comprehensive explanations than the written questionnaires (cf. SCHNELL ET AL. 2011: 326).

The number of supervised locations is determined by financial and temporal constraints of the present study. Given these restriction, 18 face-to-face interviews are conducted in total. The following paragraphs initially give information on the statistics of the personal interviews. Afterwards the data, which is collected in the face-to-face conversations, is analyzed.

Statistics

8 female and 10 male visitors are willing to participate in the more extensive personal feedback on the exhibition. Applying the same age distribution as in the written questionnaire, 33% of the interviewed persons can be classified as 60 years and older. 44% can be assigned to the group of people between 46 and 60 years. Another 3 interviewees, who equal a share of 17% of the participants, are between 31 and 45 years old. One further visitor volunteering for a face-to-face interview is between 18 and 30 years old. He displays a 6% ratio of the total amount of personal quantitative interviews.

Data analysis

- Q1: How do you like the exhibition 'Fascination Offshore'?

Question 1 as well as the appendant scale of answer choices is taken from the written inquiries. 6 out of the 18 interviewees state the exhibition to be 'very good'. The remaining 12 participants answer 'good'.

No negative opinion on the exhibition itself can be found for the first question.

- Q2: Is the content of the information boards understandable?

17 interviewees affirm this question. One visitor responds to not find the information boards understandable. His additional explanation however rather states that not every topic at display is of interest for him (12).

- Q3: Which topics do you find interesting in particular?

Due to the comparably small amount of personally conducted interviews it is refrained from offering categories as outlined for the written inquiries. Also it is deemed that reading out the number of possible answers to the interviewee would rather result in confusion than being beneficial for the flow of conversation. Question 3 therefore displays an open question in the face-to-face interviews. 8 responses state that the general overview of the exhibition is good (1, 2, 4, 7, 10, 11, 17, 18). More precise answers name the production (5), the construction (9) as well as the erection (6) of offshore wind power plants as particularly interesting. The jobs offered in the offshore wind sector are named most frequently with regard to question 3 (12, 13, 16, 19). Also the grid connection (8), the environment including animals (14, 19) as well as tourism (15) are addressed.

- Q3(2): Which topics do you find less interesting?

It is refrained from addressing topics of less interest in the written questionnaires. This can be argued for since a too detailed questioning can easily act as a deterrent. The flow of conversation in the face-to-face interviews however allows asking for viewpoints opposing question 3. To prevent confusion concerning the numbering of questions as introduced for the written inquiries, the present question is called question 3(2).

Regarding the answers, technique is named as of less interest in two cases (16, 19). One further answer outlines the ecological explanations in the exhibition as euphemistic. For this reason they are considered less interesting (5). No further answers could be obtained for question 3(2).

- Q4: Which aspects would you like to have more information on?

Question 4 is taken from the modified questionnaire. The most frequent answer in the face-to-face interviews is the transport of the electric current onshore (2, 5, 11). Animals (10) and offshore schooling programs (9) are moreover named one time each.

- S: Would you rather agree or disagree with the following statement?

- S1: The exhibition provides a comprehensive overview on the topic of offshore wind energy!
- S2: I already felt well-informed on offshore wind energy before visiting this exhibition!
- S3: After visiting this exhibition I feel better informed on offshore wind energy than before!
- S4: The exhibition gives a single-sided perspective on the offshore wind energy branch!

Whether to agree or disagree with a particular statement is asked for by means of an answer scheme. It ranges from 'agree' and 'rather agree' to 'rather disagree' and 'disagree'. A neutral choice is omitted for reasons already outlined in the explanations of the written inquiries. Including statements in the face-to-face interviews is applied for the following reasons. Regarding the statements 2 and 3 it is deemed at analyzing the degree of knowledge on offshore wind energy, which the interviewee had before and after visiting 'Fascination Offshore'.

The statements 1 and 4 serve the aim of checking the consistency of the participants' viewpoints (cf. GABLER WIRTSCHAFTSLEXIKON n.d.a). For this reason the statements 1 and 4 are asked at the beginning and the end of the list of statements.

The analysis of the answers to statement 1 reveals that 17 out of 18 interviewees (rather) agree. One interviewee decides not to take a position (10). The corresponding statement to S1 is given by S4. Its analysis shows a broad variety of responses to the statement that 'Fascination Offshore' provides a single-sided perspective on offshore wind energy. Concretely, 7 participants (rather) agree with S4. 7 visitors on the contrary (rather) disagree with it. Two further interviewees do not respond (10, 14).

The statements 2 and 3 are also analyzed mutually due to their contentwise similarity. 7 of the personally interviewed visitors (rather) agree that they already felt well-informed on offshore wind energy before visiting the exhibition. Besides one neutral positioning (15), the remaining 10 interviewees (rather) disagree with S2. The majority of interviewed visitors therefore states to have not felt well-informed on offshore wind energy before visiting 'Fascination Offshore'. The responses to S3 show that every of the 18 participating visitors (rather) agrees to feel better informed on offshore wind energy after having visited the exhibition than before.

In connection to the statements, additional comments are received from the visitors. Positive remarks are given with regard to the information provided by the exhibition (9, 12, 13, 16). Further positive reinforcement on offshore wind energy is underlined by the desire to get rid of nuclear power plants (8, 10, 15, 18).

On the other hand also critical comments are given. The visitors address the ecologic impact (5) as well as economic aspects of offshore wind energy (1). One comment also points at the little additional knowledge, which is gained from 'Fascination Offshore' on the topic of offshore wind energy in particular rather than on wind energy in general (2). It is also criticized that the renewables in general are presented too single-sided (6).

- Q5: What is your opinion on offshore wind energy?

This question is answered with a positive response by 17 out of the 18 interviewed visitors. One person does not want to answer this question (19). Consequently no negative opinions could be recorded.

- Q5(2): Why do you take this view?

Question 5 is supplemented by the request for explaining the individual opinion in question 5(2). This additional question in the personal conversations is justified with the following argument. The limited extent of the written inquiries would not have allowed including question 5(2). In the face-to-face interviews, however, question 5(2) is expected to support the flow of conversation on the part of the visitors (cf. O'LEARY 2004: 168).

The analysis of question 5(2) reveals a number of comments, which support the overall offshore wind development in Germany. The participants state different reasons underlying their opinion. It is for instance argued that offshore wind energy is less disturbing than onshore and also has more wind resources available (14). The same argument can be found in answers stating that we need to make effective use of the available energy resources (6, 16). Furthermore the argument is addressed that one needs to get rid of nuclear power by utilizing renewables such as offshore wind energy (2, 6, 7, 8, 9, 10, 17).

One visitor however also emphasizes that nuclear energy is still a big issue in Europe. The German nuclear phase-out for this reason only relocates the nuclear problem (1). Another interviewee states that he is against offshore wind energy if too many plants are erected (19). Further critical comments point into the direction of the potential impacts of offshore wind energy on the environment (12, 13, 15, 18). These viewpoints are yet opposed by a statement that offshore wind energy is generally speaking environmental friendly (11).

- Q6: Did the exhibition 'Fascination Offshore' change your opinion?

This last question of the face-to-face interviews is taken from the written questionnaires again. The answers given for question 6 reveal that two participants consider 'Fascination Offshore' to have changed their opinion on offshore wind energy to the positive. The remaining 16 interviewed visitors respond to not have changed their positive opinion on offshore wind energy on the basis of the exhibition.

Preliminary summary

The previous passages analyzed the quantitative data, which is acquired in the present empirical research. It became apparent that the face-to-face interviews first and foremost serve the aim of verifying the written feedback on 'Fascination Offshore'. The personal conversations could explicitly reinforce the results of the written feedback regarding three particular questions. First, question 2 reveals a consistency between the responses obtained from the written and aural answers. Second, the face-to-face interviews confirm the broad variety of aspects that are addressed in question 3 of the written inquiries. Third, the responses to question 4 in the personal conversations underline the results obtained from the written questionnaires. That is, only a few volunteering visitors in both cases suggest aspects that they would like to have more information on.

On the contrary, particular differences between the aural and the written feedback are also detected in three questions. First, with regard to question 1, the face-to-face interviews reveal a consistently positive opinion on the exhibition. The written inquiries however show about 10% of the volunteering visitors to little like or even dislike 'Fascination Offshore'. Second, for the question 'What is your opinion on offshore wind energy?' (Q5), 17 out of 18 face-to-face interviewees state a positive attitude. The written inquiries on the other hand reveal only about 80% of the visitors to have a positive opinion on offshore wind energy. This detected disparity with the written findings might result from the phenomenon of social desirability (cf. e.g. REUBAND 1988: 63; STOCKÉ 2004: 303; SCHNELL ET AL. 2011: 346). STOCKÉ in this connection concretely argues for a systematic distortion that results from 'social desirability bias' (ibid.). This phenomenon could also provide an explanation for the present disparity between the findings of the written and aural feedback on Q5. Third, with regard to question 6 about 90% of the personal interviews reveal no influence of the exhibition on their positive attitude towards offshore wind energy. This result stands out against about 60% of the written inquiries, which state the same. Almost 40% of the written questionnaires reveal a positive influence of 'Fascination Offshore' on the personal opinion towards offshore wind energy. The face-to-face conversations in this connection only detect about 10%.

Until this point the analysis of the quantitative data was performed. In the following the qualitative interviews are analyzed. The qualitative data analysis strives for a non-representative discussion of the topics, which were determined important in Table 1. The examination of their findings paves the way for the discussion of the conducted research in chapter 5. The expert interviews thus support answering the main research question.

4.2 Qualitative data analysis

To allow for a comprehensive analysis of the collected qualitative data, the following paragraphs first introduce the framework of the data acquisition. Initially, the interview partners are presented. Afterwards the subject areas, which are addressed in the interviews, are outlined. It is not reasonable to approach each aspect in every guided interview (cf. passage 3.7). However, every aspect of the subject areas is addressed in some of the interviews. This is discussed in the section on the subject areas. Subsequently, the data analysis is conducted.

Interview partners

The following listing shows the experts who participate in the qualitative interviews of the present research. They are selected by using the theoretical sampling method (cf. passage 3.6.2). Table 3 provides an overview of the interviewed experts. The number of the interview partners (hereafter: IP) is outlined in the first column. The order of the enumeration displays the chronological order of the conducted interviews. The second column lists the organizations that the experts belong to. For the sake of the experts' anonymity it is refrained from listing their names. Instead, all interviewees are named 'representative'.

IP number	Interview partner
1	Representative of Schulworkshops, cooperation with Deutsche Umweltaktion e.V.
2	Representative of Stiftung Offshore Windenergie
3	Representative of Erlebniszentrum Naturgewalten Sylt
4	Representative of Offshore Infopoint Cuxhaven
5	Representative of Klimahaus Bremerhaven
6	Representative of Hafenprojektgesellschaft Helgoland
7	Representative of EWE Erneuerbare Energien
8	Representatives of Offshore Infocenter Rostock & Rostock Business
9	Representative of Fährhafen Sassnitz

Table 3: Interview partners

The interviewees outlined in Table 3 can further be assigned to the classification of Table 2. This system was introduced for grouping the potential interview partners (cf. passage 3.6.2). It is however also beneficial for the following explanations to group the selected experts according to this classification scheme (cf. Table 4).

No exhibition & offshore branch	Exhibition & offshore branch
IP 6, IP 7, IP 9	IP 2, IP 4, IP 5, IP 8
No exhibition & not offshore branch	Exhibition & not offshore branch
IP 1	IP 3

Table 4: Application of classification concept for interview partners

Subject areas and appendant questions

Four thematic sections are approached in the guidelines of the interviews. Table 5 outlines these subject areas. It also provides the questions, which are assigned to the subject areas. As many questions as reasonable are addressed in the interviews. The suitability of the subject areas is gauged in every expert's case. Thus, the interview guidelines are adapted for each interview. This procedure results in a personalized list of questions for each expert. Additionally, the experts are asked to respond to a statement. It is also outlined in Table 5.

Subject area	Questions formulated in context of particular subject area
Experience	<ul style="list-style-type: none"> ▪ What is your experience in connection with your company in the field of public relations in respect to offshore wind energy so far? ▪ Is information regarding offshore wind energy provided to the public at large?
Concept/Thematic orientation	<ul style="list-style-type: none"> ▪ What was the reason for initially addressing the topic of offshore wind energy here in this region? ▪ Can you name the initial point for the realization of your exhibition/touristic offers concerning offshore wind energy? ▪ According to which criteria was the presented information gathered? ▪ Which target group do you aim to address? ▪ (How) Is visitor feedback collected? ▪ What does the visitor feedback look like so far?
Social acceptance	<ul style="list-style-type: none"> ▪ Does the topic of offshore wind energy in your eyes have the potential to evoke controversial perspectives in the population? ▪ How can the social acceptance of offshore wind energy in your eyes be influenced in the public at large? ▪ Can you name political or social events of the past that had an impact on the social acceptance of offshore wind energy? ▪ Concerning social resistance, can you name specific topics in which social resistance especially takes shape according to your experience? ▪ According to your experience, can you name motives that might underlie negative attitudes concerning offshore wind energy? ▪ Have you already come across the so-called NIMBY-syndrome during your work as an argument against offshore wind energy? ▪ Have you ever recognized a certain dynamic in the acceptance of offshore wind energy in the course of a planning project? ▪ In your eyes, does the origin of the German visitors have an influence on their potential attitude towards offshore wind energy?
Reflection (& support of social acceptance)	<ul style="list-style-type: none"> ▪ Does the support of social acceptance regarding offshore wind energy display an important aspect in your company/organization? ▪ Can you name one particular exhibition piece in your offer that especially attracts the visitors? ▪ For which type of information brokering do you estimate the learning effect of the visitor to be particularly high? ▪ Can the attendance of your exhibition/touristic offerings be regarded as a benchmark for social acceptance of offshore wind energy or is there no direct relation between those two parameters in your opinion? ▪ Where do you see opportunities to counteract potentially negative attitudes regarding offshore wind energy? ▪ How can the social acceptance of offshore wind energy be additionally fostered in your eyes?
Statement	<ul style="list-style-type: none"> ▪ The mere information provision of an exhibition represents a sufficient condition for the acceptance of the exhibited topic!

Table 5: Subject areas and appendant questions of guided interviews

Coverage of subject areas by expert categories

The following paragraphs outline the specific subject areas, which are adapted for the different expert categories. This overview aims at shaping an understanding of the gain of knowledge, which can be obtained from the different expert categories. The amount of interview partners is categorized in a total of four groups (cf. Table 4). The specific members of one such category are relatively close to each other concerning their knowledge. Consequently also the questions asked within one group are more similar to one another than to the questions asked in another grouping.

The representative of the school workshops (IP 1) embodies the only interview partner from the category 'no exhibition & not offshore branch' (cf. Table 4). The representative is neither embedded in the offshore wind energy sector himself nor does he have an own exhibition available. The German Offshore Wind Energy Foundation in cooperation with the *Deutsche Umweltaktion e.V.* initiated the conducted school workshops. These workshops address offshore wind energy at a level, which is comprehensible for pupils. The school workshops are supported and visualized by the presence of the exhibition 'Fascination Offshore'. The representative of the school workshops is deemed to have valuable experience especially in communicating knowledge concerning offshore wind energy to teenagers. The subject area of thematic orientation is partly addressable in the specific interview as well. Additionally a reflection of preceding workshops is possible in the particular interview. The remaining subject areas are however only applicable to a very limited extent. That is, especially the topic of acceptance is not deemed to be suitable. This is underlined by pointing at the concept of the explanatory work on offshore wind energy, which is applied in the workshops. In this regard the school workshops' representative takes an exceptional position among the interviewed experts. This particular interview does consequently also not meet the general course of the other expert interviews. For this reason the analysis of this specific interview is conducted separately in the main part at the end of the analysis section.

Also within the category 'exhibition & not offshore branch' only one expert is interviewed (IP 3). This can be justified with the criteria of additional benefit, which is expected from each selected interview partner (cf. passage 3.6.2). The interviewed expert of the offshore-external category allows for an insight in the success of his adventure concept. For this reason his experience in connection with an exhibition is beneficial for the present research objective. The conscious sampling does however not result in the detection of further interview partners, who fulfill the criterion of providing more valuable impulses for the present research.

The category 'no exhibition & offshore branch' contains three experts (IP 6, IP 7, IP 9). They are either chosen as interviewees due to their active involvement in public relations in the offshore wind energy sector or due to their valuable role as partners of the exhibition 'Fascination Offshore'. Due to these backgrounds, the chosen experts are considered valuable discussion partners for the present study. Initially, their experience in the field of public offshore wind energy affairs is approached. Afterwards, also the experts' considerations on the subject area of acceptance and acceptance-supporting possibilities are addressed. Additionally, their reflections on possibilities to counteract negative public opinions on offshore wind energy in Germany are considered important.

The group 'exhibition & offshore branch' contains four conducted interviews with a total number of five experts (IP 2, IP 4, IP 5, IP 8). The divergence results from the circumstance that one interview request is replied with the offer to interview two persons at a time. It appears reasonable to accept this offering. This is justified by pointing at the financial constraints of the present thesis. That is, the offering to interview two experts at a time represents an additional benefit in terms of knowledge acquisition. It applies to all group members of the category 'exhibition & offshore branch' that they can either be associated directly with 'Fascination Offshore' or are equipped with their own offshore wind energy exhibition. Even though all subject areas are addressed in their guided talks, the emphasis is put on the topic of acceptance. The experts have own experience in offshore-related public affairs and social acceptance matters. This justifies the applied weighting regarding the content of the guided talks.

Preliminary summary

Each of the chosen interview partners is deemed to possess valuable knowledge in the face of the research question. A variety of ideas and impulses is expected to be gained from the experience of the experts. Still it is emphasized that the qualitative empirical research does not claim for contentwise completeness with regard to the knowledge acquired from the specialist interviews (cf. passages 3.5, 5.6). However, a gain of knowledge can be expected from the expert interviews, notwithstanding restrictions as regards content.

The introduction to the main subject areas of the guided interviews provided an understanding of the diverse backgrounds of the interviewees. Furthermore, the main topics could be assigned to the expert categories, which were determined in the sampling process (cf. passage 3.6.2). The members of the four expert categories are expected to provide diverging perspectives on the research objective. It is also these potentially different viewpoints, which justify making use of the entire spectrum of expert categories for approaching the main research question. By taking every identified category into account, it is aimed at obtaining specialist knowledge on all subject areas that were previously detected important (cf. Table 5).

Table of analysis

The next step in analyzing the data, which is gained in the semi-structured interviews, displays the creation of a table of analysis. It serves the aim of systematically approaching the information obtained from the expert interviews. In this way a well-structured extraction of information, which is relevant in the light of the research objective, becomes possible.

The coding of the interview partners, which was outlined in Table 3, is adopted for the table of analysis. The knowledge gained from the expert talks can consequently be utilized without comprising the anonymity of the interviewees. In the table of analysis, the coded numbers of the interview partners (IP) are listed in the first column (cf. Table 6). This is followed by the designation of the timeframe in which specific information can be found in the transcript. The third column outlines the subject area that the extracted information is assigned to (cf. Table 6). The particular information itself is given in the fourth column. This column can be named the reduction column. The following remark is important for this particular column. All interviews are conducted in German. Resulting, also the appendant transcripts are in German. The researcher does not deem word-by-word translations of the German quotes into English to result in an additional gain of knowledge in the light of

the research objective. It is therefore refrained from translating the quotes word-by-word. Rather the information, which is contained in a particular quote, is condensed to the most relevant aspects of a statement. The reduction to the essential of a particular German statement is accordingly displayed in English in the fourth column of the table of analysis (cf. Table 6). The fifth column specifies the particular topic, which is addressed in the fourth column. Due to the limited extent of this section, the complete table of analysis is not displayed in this text, but can be found in Appendix (6).

IP #	Timeframe	Subject area	Reduction	Particular topic
1	e.g.: 00:00-01:01	e.g.: Experience	[Information reduced to key words]	[specification of subject area]
...

Table 6: Table of analysis - schematic structure

Based on the table of analysis, the contentwise analysis of the expert interviews is conducted. The following paragraphs address the entirety of specific questions (cf. Table 5). As explained above, the next sections build on the reduction column of the table of analysis.

Data analysis

Subject area 'experience'

The first subject area, which is addressed in the semi-structured interviews, displays the experience of the interviewees. This topic refers to the field of public relations activities with regard to offshore wind energy. In Table 5, two different questions are outlined, which are asked for the subject area of experience. If reasonable, these questions are addressed in the expert interviews.

- Q1: What is your experience in connection with your company in the field of public relations in respect to offshore wind energy so far?

Three interviewees give extensive responses to the first question (IP 6, IP 7, IP 9). The obtained answers underline the fact that public relations (hereafter: PR) activities in regard to offshore wind energy are considered especially important. The interviewees specify digital newsletters, activities of press agencies, the presence in specialist journals (IP 9) and websites (IP 7) as means with the potential to broadly address the public. Moreover information counters covering the offshore wind energy topic are named as useful tools to further illustrate this topic (IP 9). On local scale, residents' meetings have been experienced to display the most useful method in connection to public relations activities of offshore wind energy (IP 6).

- Q2: Is information regarding offshore wind energy provided to the public at large?

Information to the public at large is provided by six experts (IP 2, IP 4, IP 6, IP 7, IP 8, IP 9). Additionally to answering the second question, five interviewees provide insight into why they consider a provision of information important.

IP 9 states that PR activities on offshore wind energy serve the aim of filling information gaps. The enhancement of knowledge is stressed to give people the possibility to consider offshore-related topics more nuanced (IP 9).

Another specification addresses a movie on regional offshore development that helps answering questions, which occur in the local context (IP 4).

Remaining with the local scale, information provision on a personal level is emphasized as the most appropriate means to communicate information on offshore wind energy, i.e. by means of residents' meetings (IP 6). In this particular case it is additionally referred to the reprinted information boards of 'Fascination Offshore'. These are presented at the particular island community's townhall. The displays provide background knowledge on the offshore wind farms, which are partly visible from the island (IP 6).

'Fascination Offshore' is also considered as a medium to approach people and facilitate information on offshore wind energy (IP 2). Press releases, online announcements and information on the homepage supplement the autonomous proliferative character of the exhibition (IP 2).

Another viewpoint is introduced by the economic perspective of one interviewee. It is argued that presenting information on websites for instance only takes place within the limits of what is publishable (IP 7). This statement refers to the fact that business processes themselves are less communicated.

Subject area 'concept/thematic orientation'

The previous paragraphs gave insight in different experiences made in connection to offshore wind energy PR activities. Also they revealed different foci on the question of what is communicated how – depending on the background of the particular interviewee. The next paragraphs concentrate on the thematic orientation and the concept of touristic offerings on the part of the experts.

- Q3: What was the reason for initially addressing the topic of offshore wind energy here in this region?

Six experts give comprehensive answers to Q3 (IP 3, IP 4, IP 5, IP 6, IP 8, IP 9). Three interviewees are not addressed with the third question since it is not in conformance with their fields of expertise (IP 1, IP 2, IP 7).

Two interviewees answer by pointing at the traditionally maritime position that their particular locations contain. Also historically grown local industrial branches like ship and metal industries favor a positioning in the related offshore wind energy branch (IP 5, IP 8). This resulted in the initiation of offshore-related exhibitions.

IP 9 points out a sailing event, which was later on supplemented by exhibiting the offshore wind energy topic. This is argued for with the growing importance of the offshore wind topic at the particular harbour. The offshore topic is characterized as stepping out of the development phase and getting into the concrete phase at the particular site (IP 9).

Also IP 4 names a formerly initiated event as the trigger point for developing the current exhibition. In the case of IP 4, the previous exhibition on offshore wind energy was embedded in a broader project frame at the particular location. The remaining interest of the public on the topic of offshore wind energy resulted in the continuation of providing information on that specific subject (IP 4).

On the local scale of the island community, the offshore wind energy sector is characterized as an emerging economic pillar. However, the local offshore development was initially communicated with wrong information, it is underlined. This necessitated explanatory work on the offshore wind energy topic (IP 6).

Yet another perspective is added to Q3 by an offshore-external expert who hosted the exhibition 'Fascination Offshore'. The offshore wind energy exhibition added another viewpoint to the primary focus of the adventure center, which specialized on the forces of nature. 'Fascination Offshore' introduces the possibility to utilize natural forces and therefore supplemented the existing exhibition concept (IP 3).

- Q4: Can you name the initial point for the realization of your exhibition/touristic offers concerning offshore wind energy?

Five interviewees gave answers to the fourth question (IP 4, IP 5, IP 6, IP 8, IP 9). The former exhibition 'Fascination Offshore' on board of the museum ship MS Greundiek displayed the initiator for an own offshore exhibition concept in two cases (IP 5, IP 8). In one further case hosting another project resulted in the creation of an own offshore wind energy exhibition (IP 4).

Besides mere exhibition concepts, further touristic offerings with regard to offshore wind energy are run by two interviewees. In one case a former sailing event was supplemented by an offshore wind energy exhibition. This combination was realized due to the increasing importance of the industrial offshore branch at the particular event location (IP 9). In another case, construction site tourism for the offshore maintenance hangars revealed interesting for tourists (IP 6). The guided onshore tours are therefore supplemented by boat tours and flights to the offshore wind farms that the onshore construction works are appendant to (IP 6).

- Q5: According to which criteria was the presented information gathered?

Three interviewees could give extensive answers to this question. Two experts name a strong local focus as one fundamental criterion for selecting information for their exhibitions (IP 4, IP 8).

In another case the selection of presented information on offshore wind energy follows a fixed guideline. This guideline was determined prior to choosing the information themselves. It includes the different steps from constructing and building a wind farm up to the operation phase (IP 5).

- Q6: Which target groups do you aim to address?

A consistent picture can be drawn for the received answers on Q6. 'Fascination Offshore' addresses the broad population and interested laymen (IP 2). This statement on the exhibition can be considered as in place of the opinion of the majority of experts (IP 2, IP 3, IP 4, IP 5, IP 6, IP 8). More explicitly, it is tried not to exclude any target group (IP 3). That is, the general public of every age is aimed to be addressed.

Some specification can however be found in the interviews. Two experts especially point into the direction of trying to attract tourists (IP 4, IP 6). IP 5 additionally aims to include specialist audience as a target group. IP 8 further names teenagers as a main target group. This is due to the focus on the offshore wind energy-related economy and appendant job descriptions in the particular exhibition (IP 8).

- Q7: (How) Is visitor feedback collected?
- Q8: What does the visitor feedback look like so far?

The questions 7 and 8 are answered jointly by the majority of interviewees, even though the intention was different in the conception phase. This is why the questions are analyzed together in the following. Answers on Q7 and Q8 are obtained from eight interviewees. The responses are as heterogeneous in their nature, as they cannot be collectively characterized. The questions on received feedback are not suitable only for IP 1.

IP 9, who performs a touristic offshore event, experiences a general curious and interested attitude on the part of the public. The expert also admits the existence of critical talks and negative attitudes in the public though. These opinions are however understood as chances for having a positive influence on people in their opinion on offshore wind energy by comprehensive explanations (IP 9). IP 9 mainly acquires feedback by personal talks. Also IP 2 names face-to-face talks as an important means to generate feedback. The effectiveness of personal talks is supported by the viewpoint of IP 5 and IP 6.

Additionally guestbook, voluntary questioning terminals, visitor monitoring, critique sections on homepages and unrequested aural feedback are named as further methods to acquire feedback (IP 3, IP 8).

Regarding question 8, the received feedback on the information content of the offshore wind energy exhibition is very positive (IP 4). With regard to the offshore policy, however, critical thinking prevails. It is interpreted as a result of public irritation in connection to the energy act (IP 4).

In two further cases, the offshore-related feedback cannot be distinguished precisely (IP 5, IP 8). This is due to the integration of the offshore exhibitions in broader thematic concepts of the visitor centers. For this reason detecting the feedback solely referring to offshore wind energy is difficult (IP 5, IP 8).

On the local geographical scale of the island community, the tourist feedback is characterized by astonishment in the first place (IP 6). This especially refers to the scale of the erected maintenance hangers. These are of small sizes in comparison to onshore constructions of the same purpose. With regard to the overall size of the island, they however appear as large impacts. The most noticeable feedback therefore addresses the local offshore-related constructions rather than the touristic offerings (IP 6).

The expert of the economic division adds yet another dimension to the feedback discussion (IP 7). The interviewee states that two main groups are distinguishable with regard to receiving feedback. These are the specialist audience and the public. The public continuously gives feedback of different nature concerning the energy provision from offshore wind energy plants (IP 7).

Subject area 'social acceptance'

The previous passages discussed the conception and thematic orientation of offshore wind energy-related offerings. Also they gave insight in the subject area of feedback. This paragraphs bridge to the topic of social acceptance in connection to offshore wind energy.

- Q9: Does the topic of offshore wind energy in your eyes have the potential to evoke controversial perspectives in the population?

Five interviewees responded to Q9 (IP 2, IP 4, IP 5, IP 6, IP 8). Every expert answering this question affirms the potential of offshore wind energy to cause opposing viewpoints in the public. Three particular explanations are additionally given (IP 4, IP 5, IP 8).

IP 8 highlights negative attitudes towards technical innovations as a usual human phenomenon if people lack information about this technology.

A remark of IP 5 outlines the general nature of an exhibition concept. It is not only about presenting unquestioned aspects, but creating polar viewpoints (IP 5).

Another interviewee emphasizes the public irritation on the recent German political course of action with regard to offshore wind energy that creates a critical situation (IP 4). The consistently positive attitude that IP 4 experienced with his offshore exhibition is affected by this uncertainty first and foremost. For that reason the expert states offshore wind energy to potentially cause opposing opinions, even only with regard to the most recent developments (IP 4).

- Q10: How can the social acceptance of offshore wind energy in your eyes be influenced in the public at large?

This open question serves the aim to introduce the realm of social acceptance by conducting a brainstorm. For this reason the obtained answers cover a broad spectrum of aspects. In order to make the listing more comprehensible, the named factors are grouped according to their potential negative and positive influence. It is started with listing the potentially positive influential factors. Eight interviewees state such parameters (IP 1, IP 2, IP 4, IP 5, IP 6, IP 7, IP 8, IP 9).

One factor, which is assumed to have the potential to favour social acceptance of offshore wind energy reviews PR activities. It is especially emphasized that press, communication and explanatory work can result in personal reflections on the topic of offshore wind energy (IP 2, IP 8, IP 9). By those means potentially critical opinions may be reconsidered by paying attention to the economic driving forces of the offshore wind industry (IP 9).

Information and communication strategies can further help objectifying the offshore wind debate. This may for instance apply for marine utilization forms competing with the offshore wind industry (IP 9). Also it can apply to the visibility of wind farms from the shore (IP 5). In the latter case information counters on offshore activities at particular spots are stated to display beneficial tools to support the acceptance of offshore wind energy (IP 6, IP 9). Information providing means can moreover support visualizing the offshore topic in general. This is stressed since offshore wind energy extraction in most parts takes place outside the public visual range (IP 6).

A positive image of the offshore sector can also result from the policy, if it emphasizes the development of regional companies (IP 8). Also facing concerns and critique arising in connection with offshore wind energy instead of solely blocking opposing viewpoints is deemed to support acceptance in the long run (IP 7, IP 8). Regarding construction activities onshore, acceptance is experienced to increase again when noise and dirt disappear (IP 6).

It is furthermore outlined that the argument of creating jobs on the part of the offshore industry is especially valuable for the coastal regions. That is, the offshore industry in these economically less developed regions is particularly appreciated for its stimulating effect (IP 4, IP 5, IP 7, IP 8). It is – so to say – associated with hope and expectations in economic terms (IP 5).

It is moreover experienced that the northern German regions already consider offshore wind energy-related actions as parts of their everyday life (IP 2). As such, also the awareness of offshore wind energy as a future investment is present in the coastal regions (IP 4). For this reason further communicating the understanding of offshore wind farms not as future projects but as power plants already operating is considered the primary aim of the offshore exhibition of IP 5.

Also from a more general perspective the profits, which are obtainable from the offshore wind energy branch, are too valuable to ignore them (IP 1). In connection with the awareness that the required space is available in the North and Baltic Sea (IP 4), this point can be considered as another factor supporting social acceptance of offshore wind energy in Germany.

The second part of the brainstorm analyzes the factors, which are considered to have a potentially negative influence on the social acceptance of offshore wind energy in Germany. It also applies for the potentially negative factors that a broad range of aspects is covered by the responses of eight experts (IP 1, IP 2, IP 4, IP 5, IP 6, IP 7, IP 8, IP 9).

IP 2 names a lack of information as one important influential parameter. Missing information is often considered to result in acceptance problems and may even lead to reservations or insecurity and fear (IP 2). This experience is also shared by IP 6, IP 8 and IP 9.

IP 9 also exemplarily names local concerns of nature conservation group and tourist associations who fear interferences by the planned near-shore wind energy. An objectification of the discussion by means of information provision or studies confirming the existing spatial planning program is needed in this regard (IP 9).

IP 5, IP 6, IP 8 and IP 9 name doubts of different stakeholders concerning the visibility of offshore wind farms as influencing their acceptance in a negative way. Also additional costs are stated as a factor fueling negative opinions on the offshore wind energy industry. Such expenses can for instance result from the search of war munitions in German waters in order to develop offshore wind power plants' sites (IP 1). During the construction time, IP 6 moreover detects noise and dirt of onshore infrastructure as factors with a negative influence on the acceptance of offshore wind energy projects.

IP 5 further stresses bias to be taken into account. The interviewee outlines that his city positioned itself in the offshore wind energy sector. The particular location is however known for its former insecurity in economic terms. A decline in the general offshore wind development would result in the insecure image of the region again (IP 5). Bias is therefore considered as a factor with a potentially negative influence by IP 5.

Also the political course of action in combination with public reporting is outlined as yet another negative factor (IP 4, IP 5, IP 9). This for instance refers to the actions of the federal government in connection with the

Energiewende. Most noticeably in this regard the so-called *Strompreisbremse* (electricity price brake) did significant harm to the offshore wind energy image (IP 9).

One further ascertainment is made from the economic perspective of IP 7. Influential factors on the acceptance of offshore wind energy in general result from two different directions (IP 7). The emotional acceptance on the one hand displays the public wishes and concerns with regard to the offshore wind technology. The acceptance of offshore wind energy on the part of the expert audience is outlined on the other hand. The influence arising from the expert audience is emphasized as of greater importance in the long run (IP 7). This is underlined by the fact that the expert audience solely takes into account the economic efficiency of the young offshore industry. Consequently it only evaluates its profitability with reference to the overall energy system on a long-term perspective.

- Q11: Can you name political or social events of the past that had an impact on the social acceptance of offshore wind energy?

Four interviewees name concrete political or social events, which had an influence on the social acceptance of offshore wind energy in Germany according their experience (IP 6, IP 7, IP 8, IP 9). One further expert did not experience such kind of influential event (IP 4).

With regard to political events, the *Strompreisbremse* displays such a concrete happening (IP 9). It is argued to have resulted in a stagnation of investment in the offshore wind energy sector. Additionally the media paid special attention to the discussion of energy prices (IP 9). The expert however defends the offshore wind energy branch by pointing at the limited experience in the fields of erection and operation. Policy should offer equal conditions to offshore wind development as it did for the onshore learning curve, IP 9 claims. Therefore, it is argued, the *Strompreisbremse* came into effective with the wrong timing (IP 9).

As an energy-political event of large impact, the nuclear catastrophe of Fukushima is mentioned by IP 7. This catastrophe is characterized as a boost for the renewables. However, it is also underlined that policy is in large parts driven by such kinds of single events. This is why policy can also be described by a wave form (IP 7).

In terms of social events, IP 8 names the call of the former exhibition 'Fascination Offshore' at the particular port. This event revealed the interest of the public for further offshore-related information provision in the specific region (IP 8).

Another social event of smaller scale is distinguished for the island community. IP 6 names the settlement of the offshore operating staff on the island as a challenge in social terms. Since the island is used as the operating basis, the question of integrating the staff members in the island community appeared as a question of social character.

For the particular region of IP 4, no event with an impact on the social acceptance of offshore wind energy is detectable from experience, neither in terms of social nor political changes.

- Q12: Concerning social resistance, can you name specific topics in which social resistance especially takes shape according to your experience?

- Q13: According to your experience, can you name motives that might underlie negative attitudes concerning offshore wind energy?

The questions 12 and 13 are approached together since the answers of the experts are not given in the expected differentiation. Four interviewees give comprehensive answers to Q12 and Q13 (IP 6, IP 7, IP 8, IP 9). The general conclusion, which can be drawn from the answers, is that social resistance is basically experienced to arise from a clash of competing interests.

With reference to Q13, each interest is likely to be organized in an interest group (IP 9). As a consequence of competing interests, voices from these groups are raised. The different groups consequently argue why certain utilization forms are not possible for instance.

IP 6 supports the line of argumentation of IP 9 by pointing at the clash of interests existing on the island. The appendant community only has a limited number of guest beds available. Since offshore staff members also make use of this available bed capacity, the residents suppose negative consequences for the local tourism (IP 6). The touristic situation therefore displays a specific topic, in which social resistance becomes apparent.

Also IP 8 argues for the tourism as a source of social resistance. The assumption of the tourist associations is that the visibility of offshore wind farms scares tourists away from the coastal region. This assumption was proven wrong considering the number of overnight stays (IP 8). Still the tourism industry has to be highlighted as an important topic concerning social resistance of offshore wind energy.

The scales of social resistance are added for consideration by IP 7. The expert outlines two different categories in which social resistance plays a role. On the one hand small-scale groups exist with a good lobby work as their basis. The interviewee names discourses and a solution-oriented approach as a good way to find agreements. On the other hand the silent majority exists (IP 7). This group is expected to be more critical in the long run. That is due to the diffuse pressure it puts on the topic of offshore wind energy, which consequently leads to political actions. Since the silent majority is not led by certain persons, it also cannot be addressed by technical approaches and compromises (IP 7).

- Q14: Have you already come across the so-called NIMBY-syndrome during your work as an argument against offshore wind energy?

Five experts give an answer to Q14. The majority of experts state to have experience the NIMBY-syndrome in connection to offshore wind energy (IP 6, IP 8, IP 9). Two further interviewees did either not experience it (IP 4) or argue that the coastal regions learned to focus on the positive sides of offshore wind energy (IP 7).

- Q15: Have you ever recognized a certain dynamic in the acceptance of offshore wind energy in the course of a planning project?

Three responses could be recorded for this polar question. The obtained answers reveal different experiences.

Two interview partners affirm a certain dynamic in the acceptance of offshore wind energy during the course of a planning project (IP 6, IP 7). In the main it is argued that a kind of u-shape is typical for most planning projects put into practice (IP 7).

IP 8 on the other hand negates the question of having recognized a dynamic character in the acceptance of offshore wind energy planning projects.

- Q16: In your eyes, does the origin of the German visitors have an influence on their potential attitude towards offshore wind energy?

Seven interviewees are addressed with this yes-no-question (IP 1, IP 2, IP 4, IP 5, IP 7, IP 8, IP 9). Their answers show an affirming tendency. Five interviewees argue for the existence of a north-south divide concerning the attitude towards offshore wind energy or speculate so (IP 1, IP 2, IP 7, IP 8, IP 9). The most common argument is the geographical proximity of the offshore sector with the people in the coastal regions (IP 1). For this reason the people also learn better about the economic advantages of the offshore wind energy branch (IP 7).

Two interviewed experts do not see a difference in attitudes depending on the origin of the German visitors or at least speculate so (IP 4, IP 5). The main argument brought forward refers to the fact that the offshore technology itself is deemed to be in the center of attention. Tourists come to see the exhibition to learn about the applied technique rather than discussing the acceptance of offshore wind energy (IP 5).

Subject area 'reflection (& support of social acceptance)'

The previous passage approached topics concerning social acceptance, which were theoretically detected in the desk research. It was aimed at determining, which of the theoretical considerations are recognized in practice from the experts' viewpoints. The following passage connects the already addressed subject areas by reflecting on the conceptualization and the topic of social acceptance. The remaining questions are analyzed in groups regarding their focus. This procedure is justified with the internal differentiation, which was expected in the conception phase of the questions. Retrospectively a condensed analysis appears more meaningful though.

- Q17: Can you name one particular exhibition piece in your offer that especially attracts the visitors?
- Q18: For which type of information brokering do you estimate the learning effect of the visitor to be particularly high?

Four answers are obtained for this question block (IP 3, IP 4, IP 5, IP 8). The reflections on the distinct exhibiting concepts show no consistent trend. Two experts argue for no single highlight existing in their exhibition (IP 3, IP 8). IP 4 emphasizes the exhibited movie to capture the greatest attention of the visitors.

A range of considerations can also be found in the answers for the greatest learn effect. IP 5 states emotional learning to be more successful than mere science center approaches. On the contrary, the science center approach with interactive components is emphasized by IP 3 and IP 8 as an efficient method to transfer knowledge. IP 4 outlines audio-visual learning as effective.

- Q19: Does the support of social acceptance regarding offshore wind energy display an important aspect in your company/organization?
- Q20: How can the social acceptance of offshore wind energy be additionally fostered in your eyes?
- Q21: Where do you see opportunities to counteract potentially negative attitudes regarding offshore wind energy?

With regard to question 19, it reveals that social acceptance of offshore wind energy is considered as an important aspect in four interviews (IP 2, IP 4, IP 5, IP 7). A concrete possibility to foster social acceptance is named as the repeated information provision (IP 9). By those means a more nuanced and objective viewpoint on offshore wind energy can be achieved in public (IP 9).

Also it is necessary to communicate offshore wind energy as an important component of the *Energiewende* in an understandable way (IP 4). This can result in a broad learning effect, it is argued as a reply for question 20. Edutainment is mentioned as the most suitable means to support this aim (IP 4).

With regard to the questions 20 and 21, it is further pointed into the direction of the persons officially involved in an offshore wind planning project (IP 7). The expert underlines that a usually delayed action of the public needs to be taken into account more seriously by the officials. This is necessary since the formal steps of a planning project are already fulfilled when the public starts to learn about this particular project for the first time (IP 7). Acceptance is not to be had for nothing, the interviewee underlines. This is also why he argues for the need to approach the public already at earlier stages of a planning project (IP 7).

A more transparent designation of priority areas in the sea is proposed as another possibility to better involve the public in offshore planning activities (IP 9). Facing critical points and matters of concern is moreover stated as an opportunity to counteract negative public attitudes regarding offshore wind energy (IP 7). Steadiness in policy is furthermore required to eliminate public irritation (IP 4, IP 8). Also, an offshore exhibition should demonstrate the continuous development of the branch to underline its state of the art (IP 5).

The preliminary conclusion drawn by IP 6 contrasts the afore-mentioned answers to the questions 20 and 21. The interviewee states that acceptance support does not need to be further promoted in the island community. The same accounts for counteractions regarding negative attitudes of offshore wind energy. In the expert's eyes these measures are no longer required (IP 6). Rather he points at the autonomous acceptance process regarding offshore wind energy, which has already started in the community of the island. For this reason the expert states that the formerly conducted information provision and explanatory work were already successful. No further external support is any longer required (IP 6). These experiences however take a unique position in the conducted qualitative interviews.

Concluding this reflecting question block on social acceptance of offshore wind energy, one particular aspect is outstanding. It is the statement that 100% acceptance represents an unrealistic target (IP 2, IP 6, IP 7, IP 8, IP 9). This ascertainment displays a consistent point among the interviewed experts in their reflections on social acceptance of offshore wind energy in Germany.

- Q22: Can the attendance of your exhibition/touristic offerings be regarded as a benchmark for social acceptance of offshore wind energy or is there no direct relation between those two parameters in your opinion?

Two experts answer question 22 (IP 4, IP 5). Both negate the question by arguing in different directions. IP 5 emphasizes the logistic limitations occurring in his exhibiting concept. That is, the offshore exhibition only displays one out of a number of different touristic offers in the visitor center. An exact border on the visitors'

motivation to see the offshore exhibition can therefore not be drawn (IP 5). IP 4 underlines the attendance of the exhibition to be a subject to the advertisement of the small information center. For this reason it rather is a lack of advertisement that conditions an absence from the exhibition (IP 4).

- Statement: The mere information provision of an exhibition represents a sufficient condition for the acceptance of the exhibited topic!

This statement displayed the last aspect addressed in the expert interviews. The interviewees are requested to state their position on it. Five experts comment on the statement. Three of them oppose the viewpoint of the assertion (IP 5, IP 7, IP 8). One argument for negation is that the information provision displays a necessary but not a sufficient prerequisite to reach acceptance (IP 7). Also it is stressed that a topic needs to come alive in order to allow for its acceptance (IP 8).

Two interviewees agree with the statement by underlining that acceptance cannot be raised without an information basis (IP 9) that makes the topic become a part of the public everyday life (IP 4).

Analysis of expert interview 'no exhibition & not offshore branch'

It was explained earlier in this section that the expert conversation of the category 'no exhibition & not offshore branch' (IP 1) in large parts differs from the other specialist interviews as regards content. The specific expert interview rather addresses experiences in the field of offshore-related knowledge transfer to pupils. For this reason this particular interview is analyzed separately in the following paragraphs.

The exhibited job descriptions were expected to be of primary interest for the teenagers (IP 1). However, this assumption proofed wrong during the conducted school workshops. Rather the interviewee states that the variety of offshore-related aspects addressed in the workshops attracts the pupils. Still, it is underlined that further information on job possibilities in the offshore branch would be beneficial. Action days with experienced offshore staff answering question are deemed to beneficially supplement the workshops. This would make the offshore topic come alive for the pupils (IP 1).

It is also stressed that the conducted school workshops proofed valuable in every school type that was covered. Same applies for the different grades in which the interviewee performed the school workshops. Nevertheless it is underlined that the workshop concept repeatedly needs to be adapted to age and knowledge of the teenagers. Still the expert argues for the added value of the offshore wind energy workshops in every class.

It is moreover emphasized that the information boards are not too difficult in their composition and texts even for young students. Still some classes require more time than others to get to the essential of the required topic. For this reason the time frame of the workshop concept sometimes poses a challenge to the interviewee. Finally the supervision of the workshops is addressed as another point that sometimes displaying a difficulty.

Preliminary summary

Before continuing with the data discussion in chapter 5, the analysis of the expert interviews is summarized. The initial target of the qualitative interview conduction was to provide a great variety of considerations from diverse fields of expertise. The different backgrounds of the interviewees resulted in a great spectrum of

aspects, which could be addressed in the expert conversations. A preliminary summary on the four main subject areas gives an overview on the answers, which were obtained from the expert interviews.

Regarding the first subject area 'experience', the majority of interviewees confirm a provision of information on offshore wind energy to the public. The used means however differ between the experts' organizations. Some publish information at large-scale within the limits of what is publishable regarding their business processes. Others restrict themselves to communicating offshore-related information on the local scale. Also the means of information provision range from residents gatherings to websites, movies and online announcements.

The obtained responses for the second subject area 'concept/thematic orientation' mainly reveal a consistency among the interviewed experts. Even though their particular fields of expertise differ, they mostly outline a growing importance of the offshore wind energy sector in their regions. This steady increase is often characterized as the initiator for addressing the offshore topic in the particular interviewee's case. Another consistency is given by the responses regarding the target groups, which are aimed to be addressed by the touristic offerings and exhibitions. The experts in this connection mostly outline the broad population. Only minor specializations are further verbalized.

The feedback collected from the visitors is ascertained as another meaningful element of the interviewees' PR activities. It is collected by a range of methods and varies significantly for the different experts' cases. Astonishment and positive comments regarding exhibited contents of some interviewees for instance contrast negative responses to the offshore wind energy generation of other interviewees. Such distinguishable nuances in the received feedback are characterized as subjects to political occurrences among other influential aspects.

The third subject area 'social acceptance' shows a great variety among the obtained answers of the experts. This especially applies to the conducted brainstorm on positive and negative influential factors on social acceptance of offshore wind energy. The received answers reveal a broad spectrum of aspects, which are in this regard considered important by the experts. The interviewees are however in complete agreement on the fact that offshore wind energy has the potential to cause polar viewpoints in the public.

The question on political or social events, which have an impact on the public opinion regarding offshore wind energy, reveals interesting answers. Concretely, the nuclear catastrophe of Fukushima in March 2011 is characterized as an important energy-political event of international scale. On the national level, the *Strompreisbremse* is additionally mentioned. In terms of social events, however, the trigger points are of comparably smaller scale. In one case the calling of the museum ship MS Greundiek in the particular harbour is named. In another interview the integration of the offshore operating staff in the specific island community displays such a social event.

Opposing viewpoints on offshore wind energy are characterized as the result of different interest groups by the interviewees. Competing utilization forms are concretely labeled as touristic interests that are assumed to clash with offshore wind energy development.

The bare majority of interviewees furthermore confirm to concretely have experienced the NIMBY-syndrome in connection with their offshore-related work. The same applies for the experience of a dynamic character of

acceptance with regard to offshore wind energy. The affirming experts represent only the slight majority. A more distinct affirming tendency reveals for the question on the origin of German visitors. The majority supports the viewpoint that the attitudes of the visitors on offshore wind energy are influenced by their origin.

The fourth subject area 'reflection (& support of social acceptance)' is accompanied by opposing viewpoints of the interviewees. Single highlights in the experts' exhibitions can hardly be identified in the conversations. Also regarding the greatest learning effect, the opinions of the interviewees differ significantly. While one interviewee stresses emotional learning as the most efficient learning method, others emphasize audio-visual learning and the science center approach.

Altogether the social acceptance of offshore wind energy displays an important aspect of the interviewees' work. An iterative, transparent and understandable communication of the offshore topic is underlined as the basis for a successful *Energiewende* in the interviews. Only one expert explains that such kinds of acceptance-supporting procedures are no longer required in his concrete case of local scale. It is found that this experience however takes an exceptional position among the conducted interviews.

The responses of the interviewed experts are almost weighted regarding the statement that a mere information provision on a topic displays a sufficient condition for the acceptance of the exhibited topic. Only a slight majority underlines the fact that a topic rather needs to come alive than solely being informed about.

As a concluding statement, the interviewees share the view that 100% social acceptance on offshore wind energy is an unrealistic target. It is consequently not aimed for by the interviewed experts.

The preliminary summary on the expert interviews revealed that some specialist perspectives on particular issues are relatively close to each other. Others however differ among the interviewed experts. It is this variety of obtained recognitions, which is valuable for ultimately approaching the main research question of this study. Concretely, the knowledge gained from the specialist interviews especially allows for addressing the third sub-question by creating a comprehensive SWOT-analysis. This again adds to ultimately approaching the main research question. The assessment of the exhibition concept regarding its potential to support social acceptance of offshore wind energy in Germany is subject to the following chapter.

5 Discussion and Conclusion

This concluding chapter deals with the research (sub-) questions of the present thesis in the first place. The first part addresses the research hypotheses and the sub-questions. The research hypotheses (cf. passage 3.3) are tested on the basis of the empirical findings of the present study (cf. passage 5.1). In passage 5.2 the research sub-questions are answered. The answers are formulated on the basis of the empirical research and the investigated specialist literature. Applying the research model (cf. passage 2.8) allows for systematically formulating answers to the research sub-questions. Based on these answers, the main research question is subsequently approached in passage 5.3. The discussion displays the fourth part of this chapter. It additionally bridges to passage 5.5, which deals with the recommendations (cf. passage 5.5). The suggestions are directed towards the German Offshore Wind Energy Foundation. They are based on the findings of the conducted research. The last part of this chapter gives a conclusion of the present thesis (cf. passage 5.6). It provides a brief review on the research. Also it reflects on the methods applied in the present study. Additionally this passage includes an outlook on how a prospective extension of this research could be conducted.

5.1 Testing the research hypotheses

After the data analysis in the previous chapter, it becomes possible to test the hypothetically supposed relations (cf. passage 3.3) based on the empirical data. Recalling the argument of RAAB ET AL. in LAAS (2011), research hypotheses display the initial point in empirical knowledge acquisition. In this regard they give some indication for subsequently approaching the sub-questions. For this reason the testing of the research hypotheses precedes the investigation of the sub-questions. With the help of the data collected in the field research, the empirical check of the formulated hypotheses is conducted in the following. The two hypotheses are recalled before being tested by means of the empirical findings.

Hypothesis 1, in regard to the geographical distinction of social acceptance:

The social acceptance of offshore wind energy is subject to a spatial distribution. Since the discussion of offshore wind energy is less present in central and southern Germany than in the northern coastal regions, a north-south divide of the social acceptance of offshore wind energy is detectable in Germany.

Regarding hypothesis 1, verification cannot be conducted by means of the quantitative data acquisition. This can be argued for because the questionnaire does not ask the volunteering visitors to state their postal code or the like. As a result, the opinions given in the questionnaires cannot be assigned to any geographical backgrounds. In this respect it is additionally important to underline that not only local residents are attracted by 'Fascination Offshore'. Rather it is stressed that supporting programs and continuous advertisement of the exhibition approach tourists as well. Consequently the analysis of the feedback of particular locations cannot distinguish between opinions on the part of local inhabitants and tourists retrospectively. Resulting it is not possible to draw comparisons of the responses to the question 'What is your opinion on offshore wind energy?' (cf. Appendix (3), (4)). This is why the written inquiries are not considered appropriate tools for testing the existence of a north-south divide of offshore wind energy-related social acceptance in Germany.

Based on these considerations, hypothesis 1 is checked by using the conducted expert interviews. The specialists with a background in offshore wind energy are asked to comment on a potential existence of an offshore-related north-south divide of social acceptance in Germany. The conclusions drawn on the part of the experts reveal the following tendency. The particular phenomenon is affirmed or assumed to exist by five of seven interviewed experts (IP 1, IP 2, IP 7, IP 8, IP 9), who respond to Q16 'In your eyes, does the origin of the German visitors have an influence on their potential attitude towards offshore wind energy?' (cf. passage 4.2). The primary argument for their supposition displays the increased awareness of the offshore wind energy topic in the northern German regions. In the coast areas, it is argued for the most part, offshore wind energy and related industrial fields represent a part of peoples' everyday life (IP 1, IP 2). Additionally it is assumed that also the accompanying effects of the offshore industry have been experienced to a larger degree in the northern regions (IP 8, IP 9). Also it is stated that the northern areas are comparably weaker in economic terms than the southern German regions (IP 7). This is why the economic benefits of the offshore wind industry are assumed to preponderate in these areas (IP 7).

One interviewee (IP 8) however adds another fact for consideration in his answer on Q13 (cf. passage 4.2). He refers to the number of overnight stays. IP 8 states that different travel behavior of German tourists has not been detectable in the northern regions now that offshore wind power is installed. For this reason it is argued that opposition on the part of southern German tourists is not yet measurable. Two experts (IP 4, IP 5) confirm this recognition by IP 8. They outline that they have not recognized protests by German tourists against offshore wind energy. More precisely, IP 5 speculates that the technical aspects of offshore wind energy are in the center of attention on the part of the visitors. For this reason IP 5 does not suppose the existence of a geographical divide on social acceptance of offshore wind energy in Germany. Also IP 4 experiences southern German visitors to be rather interested in the offshore industry than having negative opinions on it.

Concluding the findings from the expert interviews it can be stated that the majority of interviewees affirm hypothesis 1 or assume the phenomenon in question to exist in Germany. Two experts running their own exhibition negate the existence of such a geographical divide regarding social acceptance of offshore wind energy in Germany (IP 4, IP 5). The general tendency seems to direct towards the verification of the first research hypothesis by means of the available empirical sources (cf. KROMREY 2006: 41).

Hypothesis 2, in regard to the attendance of the exhibition and a positive attitude on offshore wind energy:

People who have visited the exhibition 'Fascination Offshore' have a positive attitude towards offshore wind energy in Germany.

The attendance of the exhibition 'Fascination Offshore' was characterized as one of the main objective criteria by which the German Offshore Wind Energy Foundation measures the success of the exhibition (cf. Appendix (7.2)). It is interesting to investigate if visitors of the exhibition have a positive attitude towards offshore wind energy in Germany after their visit. This is tested by using the quantitative data.

In order to test hypothesis 2, the questions 1 and 5 of the written inquiry display important sources of information. To briefly recall the results of Q1, it can be stated that almost 90% of the visitors state 'Fascination Offshore' to be (very) good. Concerning Q5, about 80% of the volunteering visitors state a personal positive

opinion on offshore wind energy. The following correlations between the responses to these two answers can be drawn. From the visitors, who give a positive feedback on the exhibition (Q1), the majority also states a positive opinion on offshore wind energy in general (Q5). Concretely, out of the total amount of 161 written inquiries, 126 visitors give positive answers to both the questions 1 and 5. Also among the face-to-face interviews, 17 out of 18 visitors give positive answers to both questions (cf. passage 4.1.2).

With regard to Q6 whether the exhibition influenced the personal opinion on offshore wind energy, the majority of visitors does not state a change in their attitudes after visiting the exhibition (cf. passage 4.1.1). In concrete terms, 9 out of 161 persons state a remaining negative attitude towards offshore wind energy even after visiting the exhibition. 86 visitors on the contrary state that their personal positive opinion has not been influenced by 'Fascination Offshore'. 4 persons respond that the exhibition has influenced their opinion on offshore wind energy to the negative. 61 visitors highlight a positive influence of 'Fascination Offshore' on their personal attitude towards offshore wind energy.

In summary the previous paragraphs demonstrated that the quantitative data gives some indication of the verification of hypothesis 2. That is, the vast majority of the visitors, who are willing to give feedback on the exhibition, state a positive opinion towards offshore wind energy. Additionally, the empirical research reveals almost 90% of the visitors to find the exhibition (very) good. In total almost 80% of the responses of the written inquiries confirm hypothesis 2. More than 90% of the face-to-face responses affirm this finding.

The answers to question 6 revealed that the majority of visitors (57.8%) do not change their positive opinion on offshore wind energy after visiting the exhibition (cf. Figure 17). The share of visitors who state that their opinion changed after visiting 'Fascination Offshore' only comes in second place with 42.2%.

The empirical data points into the direction of confirming hypothesis 2. It provides pieces of evidence of a connection between the attendance of the exhibition and a positive attitude towards offshore wind energy in Germany. The empirical data could however not test a representative pre-post comparison of the visitors of the exhibition. This circumstance is reviewed in passage 5.6.

5.2 Answering the research sub-questions

The previous passage tested two relations that were hypothetically supposed to exist in connection with the present research. The present passage approaches the research sub-questions. They were initially formulated in chapter 1. In this connection they were also characterized as means to approach the main research question. This was argued for by pointing at the internal complexity that the main research question comprises:

Does the exhibition 'Fascination Offshore' display an instrumental information provision for supporting social acceptance of offshore wind energy in Germany or an ineffective attempt to overcome offshore obstacles?

The specific sub-questions were identified as tools, which address the main components of the research question. For this reason approaching each of the three sub-questions separately allows for a successive approximation of the main research question. In order to ensure a structured progress of answering the sub-questions, a research model was proposed in passage 2.8. The following passages stepwise apply this research model, after recalling the specific sub-questions.

5.2.1 Answering sub-question 1

Sub-question 1: *Which factors have an influence on the social acceptance of offshore wind energy in Germany?*

In order to determine the factors, which have an actual influence on the social acceptance of offshore wind energy in the present investigation, the following awareness is emphasized. The influential factors that were determined in the literature research are often of a more general character with regard to renewables planning projects. That is, they not necessarily apply directly to the present research. For this reason the specialist literature review rather displays a frame, which allows pointing into a direction. Against this background, the quantitative feedback on 'Fascination Offshore' displays the most meaningful source of information for answering sub-question 1. Additionally, the conducted expert interviews can serve as supplements by providing concrete specialist experiences.

Influential factors detected by quantitative research

When addressing the feedback gained from the visitors of 'Fascination Offshore', especially the following topics stand out. Out of the answers to question 3 of the written inquiries, the technical aspects as well as the prospective expansion of the offshore wind energy sector are considered most interesting. In third place, the ecology is named as a subject of particular interest. Furthermore the costs of the offshore branch are named as an important issue. The outlined responses are also in most parts in accordance with the results of the face-to-face quantitative interviews. For this reason the face-to-face responses are not repeated at this point.

Up to here, no judgement of the positive or negative influence of the addressed factors was conducted yet. This is subject to this passage at a later point. Before, it is continued with the mere detection of valuable quantitative responses with regard to sub-question 1. Regarding aspects of less interest that are asked for in question 3(2) of the aural quantitative interviews, one answer is of particular interest. The specific interviewee refers to the ecology as a topic of less interest. This answer is distinctive because the decreased interest is argued to be caused by the 'euphemistic' perspective that the exhibition draws on the impacts of offshore wind energy on the ecology (cf. passage 4.2.1: Q3(2), interviewee 5).

Question 4 of all quantitative inquiries asks for aspects that the visitors would like to have more information on. In summary the responses to Q4 reflect the bias, which was already found for the ecological topic in Q3(2). That is, critical thinking on the offshore topic becomes apparent in a number of answers to Q4. Primarily the onshore grid connection of the offshore wind farms is addressed in the aural conversations as an aspect that especially lacks information in the exhibition. The same topic is also repeatedly communicated in the written inquiries. The reason is that the grid connection currently displays a highly controversial issue in Germany (cf. e.g. FAZ 2014; SZ 2014; NDR 2014). Further decisive factors collected for Q4 can be named as the costs of the offshore industry and its impacts on flora and fauna again. It is moreover criticized that economic and technical difficulties of wind power plants are not illustrated by the exhibition. Also additional explanation on the renewables topic and offshore wind energy's share in the prospective energy mix is asked for.

The previous paragraphs confirmed the quantitative feedback of the exhibition to display a valuable means for addressing sub-question 1. This is underlined by the fact that the obtained answers demonstrate the actual

considerations of the visitors on offshore wind energy. As HÜBNER and POHL (2014) summarize it, acceptance consists out of the sum of positive and neutral attitudes as well as supporting actions and passive endorsement (2014: 2). In the light of sub-question 1 the determined considerations particularly contribute to ascertaining the factors, which shape the outlined attitudes.

Influential factors detected by quantitative and qualitative research

The quantitative findings can be supplemented by the qualitative interviews. These are examined for intersections with the influential factors determined in the visitors' feedback. By doing so, the ascertained aspects can be reinforced by the qualitative research. Moreover the expert interviews represent meaningful supplements. This is because a number of particular consistencies exist between the qualitative and quantitative findings. Resulting from these merging aspects, also judgements on their positive or negative influences can be conducted. The assessments are included in the following explanations.

Negative influential factors

The cost effectiveness of the offshore wind industry is detected as a topic of negative influence on the social acceptance of offshore wind energy in some specialist conversations. It applies to both the qualitative and quantitative empirical research that cost effectiveness covers a broad variety of different considerations. In accordance with the aspects that are named by the visitors in financial terms, IP 7 outlines the cost degression of the offshore wind development as a big future question. Financial disputes were already subject to passage 2.4.5. In this section offshore-related financial aspects were examined as initiators for social resistance. The quantitative research affirms the negative influence that financial aspects can have on the social acceptance of offshore wind energy. Additional to these mere economic discussions, IP 2, IP 4 and IP 5 add that former inappropriate actions taken by the German government resulted in public insecurity. Such a political measure is concretely addressed as the *Strompreisbremse* (IP 9). This tool is argued to have resulted in hesitation regarding investment in offshore wind planning projects and widespread public discussions (cf. passage 4.2).

More information on technical difficulties and problems with offshore wind power plants is requested in the visitor feedback. IP 1 among others confirms the need for addressing these aspects. This is because technical discussions present weak points of offshore wind energy debates, the expert argues. For this reason technical difficulties are stressed as sources of negative influence on the social acceptance of offshore wind energy.

IP 6, IP 7 and IP 9 ascribe a negative influence to the impacts that offshore wind energy has on the environment. The environment consequently displays an aspect of concern in both empirical research forms. The expressed worries on flora and fauna of the ocean can among others be connected to FIRESTONE and KEMPTON's considerations on the 'wild life' (2007: 1587). In this regard the specialist literature argues in accordance with the findings of present research on public concerns.

As another factor of influence, the prospective expansion of the offshore wind energy sector is addressed by the visitors of the exhibition. On the one hand visitors state the further development of offshore wind energy to represent a positive aspect. This public attitude is confirmed by the experience of IP 4. On the other hand visitors argue that too many erected offshore wind power plants would not be supported by them. IP 9 affirms

this awareness by stressing that too extensive offshore wind development can result in decreasing acceptance. It therefore needs to be acknowledged that the prospective expansion of the German offshore wind energy sector comes with a double character. Also in the literature, WARREN and BIRNIE for instance underline findings of CAMPBELL (2008) regarding the ‘cumulative impact of increasing numbers of wind farms’ (2009: 114).

One further aspect is particularly interesting for its detected mismatch among the empirical methods. IP 8 and IP 9 explain that the German tourism industry of the Baltic coastal regions is afraid of a decreasing attractiveness due to offshore wind development (cf. e.g. NEUE ENERGIE 2014; NORDDEUTSCHE NEUSTE NACHRICHTEN 2014; OSTSEEZEITUNG 2014, 2014a, 2014b, 2014c; SCHWERINER VOLKSZEITUNG 2014). No quantitative inquiry however directly affirms these worries of the tourist associations. That is, requests for further information on touristic offerings for offshore wind energy are given in the feedback. However, no questionnaire gives indication for a threat of the offshore wind energy to the coastal tourist regions. For this reason, the fears of the tourist associations could not be confirmed by the quantitative research. This corresponds with the finding of O’KEEFE and HAGGETT, who discuss ‘stakeholder opposition rather than public opposition’ (2012: 3719).

Positive influential factors

Regarding the factors with a positive influence on offshore wind energy in Germany, appendant job offerings are often addressed in the visitor questionnaires. Also experts underline the importance of this aspect as a positive influence on the social acceptance (IP 5, IP 7, IP 8). The specialists stress that the economically weaker northern regions learned about the benefits of the offshore-related industry (cf. e.g. LADENBURG, MÖLLER 2011: 4234). Offshore wind energy has moreover become a part of everyday life (IP 1, IP 2). Also, wind power plants are outlined to be considered as job-creating machines in northern Germany (IP 8).

Another positive aspect that is detected as complementary in the empirical research forms refers to the dimensions of the wind power plants. It was already outlined before that offshore wind-related technical aspects can display factors of negative influence on the social acceptance. The same topic can however be accompanied by a positive connotation as well. IP 5 stresses this fact by explaining that the fascination of the offshore wind power plants’ components especially attracts the visitors. A number of 27 visitor responses to Q3 underline this statement (cf. Figure 15). The quantitative face-to-face interviews additionally confirm the attractiveness of the offshore technology by explicitly referring to the production, construction and erection.

A last positive aspect that is addressed in both empirical research forms names the environment. It needs to be emphasized that the same dividing character as ascertained for the technical aspects applies here. The dichotomous character of the ecologic perspective on offshore wind energy results from the following circumstance. On the one hand, visitors indicate that offshore wind presents an inevitable condition in order to realize the German nuclear phase-out. Such considerations point into the direction of the ecological parameter as a factor of positive influence on the social acceptance of offshore wind energy. IP 1 and IP 7 support this line of argumentation. On the other hand, however, concerns of the local ecologic impacts of the offshore industry oppose this viewpoint.

Preliminary summary

Altogether, the previous paragraphs determined connections between the qualitative and quantitative empirical results regarding factors with an influence on the social acceptance of offshore wind energy. In fact, the entire amount of aspects detected in passage 4.1 could be argued to display answers to sub-question 1. It is however emphasized that the present section determined the factors, which are quantitatively ascertained and additionally reinforced by qualitative expert interviews. By those means, the aspects of capital importance could be ascertained. The presented linkages are thus considered as the essential answers to sub-question 1.

Especially the negative feedback of the visitors on 'Fascination Offshore' can additionally be regarded as highly valuable. This is because it gives some indication of specific dissatisfaction on the part of the visitors. Concretely, insufficient information on particular offshore-related topics or even the total absence of certain topics is repeatedly criticized by the visitors. This critique suggests checking the weighting, which is applied between information richness and the degree of aggregation in the exhibition concept. Based on the IRA approach (cf. passage 2.5.3), the complexity of the data contained in 'Fascination Offshore' is assessed. This procedure appears reasonable since critical visitor feedback can be argued to contain beneficial impulses for improvement. Making sense of complex data by evaluating the applied trade-offs also supports the subsequent positioning of the exhibition in its determined environment. Using the IRA approach is further deemed to help formulating recommendations in passage 5.5.

Making sense of complex data

The detection of influential factors above is supplemented by an approach to determine the degree of information richness utilized in 'Fascination Offshore'. This procedure follows the suggested IRA approach of the research model (cf. passage 2.8). Exerting the IRA approach to the exhibition concept allows positioning the exhibition with regard to the degree of information richness it communicates to its target environment.

The first step of this section displays the conduction of a written reasoning. It ascertains the information richness, which is applied in the exhibition. The written argumentation is in a second step supplemented by revisiting Figure 9. With a renewed visualization, the trade-off between information richness contained in the exhibition concept and the degree of aggregation is demonstrated (cf. Figure 18). The two outlined steps complement each other and result in a comprehensive line of argumentation for purposefully applying the IRA approach to 'Fascination Offshore'.

For determining the degree of information richness contained in the exhibition, the following aspect present a valuable indication. The exhibition concept was outlined as being designed for interested laymen (cf. Appendix (7.2)). Against this argument, it becomes apparent that information provided by 'Fascination Offshore' need to be restricted to a certain degree of knowledge. This can be underlined with the argument that the presented content needs to fulfill the criterion of understandability for the laymen that it was conceptualized for.

The following reasoning for assessing the trade-off between the two main facets can descriptively be based on the quantitative research. The empirical data give some indication of the concrete opinion of the laymen, who are in fact addressed by the exhibition. For this reason the inquiries are valuable for applying the IRA approach.

On the one hand, more than 90% of the written and aural inquiries each affirm the information boards to be understandable (Q2). On the other hand, the responses on the questions 3 and 4 show a recurrent critique in terms of the completeness of information presented in the exhibition. This criticism partly refers to the absence of particular topics. Partly, also in-depth discussions of addressed subjects are outlined to be missing. The same critique applies to the absence of explanations that go beyond the presented information.

Against the background of the target environment of the exhibition (cf. passage 2.2), the argumentation above identifies two ascertainments. First, a trade-off between the facets of information richness and the degree of aggregation is necessary for tailoring information, which is communicated via 'Fascination Offshore'. Second, each information board of the exhibition discusses different aspects of the offshore wind energy sector. Every communicated subject is therefore restricted in its contentwise completeness. This results from the limited space available for presenting information. The visitor feedback stresses the determined level of presented information to be insufficient in parts. Also, some criticism addresses the absence of particular topics. As a result, the degree of information richness applied in the exhibition reveals inappropriate for an optimal communication of offshore wind energy-related subjects. Consequently this particular facet needs to be considered as weighted too little in some cases of the exhibition concept. Figure 18 sketches the current trade-off of the information content and the degree of aggregation contained in 'Fascination Offshore'. The declining red point indicates the approximate positioning of the current weighting.

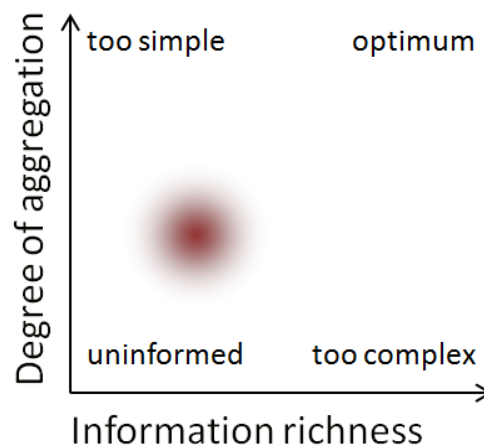


Figure 18: Applying the IRA approach to the exhibition concept
 (Source: own illustration; adapted from ABSON ET AL. 2012, FIG. 1)

5.2.2 Answering sub-question 2

Sub-Question 2: *Under which conditions can a provision of information as executed in the case of the exhibition 'Fascination Offshore' help to support social acceptance of offshore wind energy?*

It was already emphasized in passage 2.7 that the quantitative data does not display the appropriate means for formulating answers to the second sub-question. This can further be justified by pointing at the exhibition concept of 'Fascination Offshore'. It is conceptualized for interested laymen with the aim to support their acceptance of offshore wind energy. To make use of the feedback, which is collected from these visitors, would not result in meaningful findings. Consequently, significant awareness is rather obtainable from knowledge

sources that are not included in the target environment of the exhibition. This is why specialist literature is considered as an important foundation for answering sub-question 2. The findings are further supplemented by knowledge gained from the qualitative expert interviews. The quantitative data collected can yet be utilized for empirically counter-checking aspects addressed by the specialist literature and the experts.

WOLSINK (2007) states that 'although there is nothing wrong with the idea to improve public knowledge about renewables, this will not simply change attitudes' (2007: 1193). His critical remark can be regarded as in place of the wider appeal to reflect on the usefulness of an information-providing tool. In connection with 'Fascination Offshore', this reflecting process can be conducted by pointing at the framing programs of the exhibition among others. At the particular exhibition location, the Foundation aims at supporting the exhibition concept by action days, open days or the like (cf. passage 2.2). These accompanying events are continuously announced in press releases by the Foundation. Also they are promoted with the help of online announcements. The expert opinions underline the necessity of PR activities, which are conducted in order to support the publicity of the exhibition. Additional to the measures taken for 'Fascination Offshore', IP 9 states a regular newsletter as another tool for good publicity. The expert moreover names the presence in specialist journals as a beneficial means for PR activities. On the local scale, the information provision to the public is stressed to always have been connected to residents' gatherings (IP 6). This personal contact is outlined to have resulted in social acceptance of the nearby offshore wind farms. Concluding, IP 9 stresses communication and PR activities to serve the aim of visualizing the offshore wind topic. This is argued as of utmost importance since offshore-related activities in large parts take place outside the visible range of the public.

Policy can be named as another aspect of importance in connection with the successful promotion of the offshore wind energy subject (IP 7). On the one hand political work on a local scale is emphasized with regard to the development of a regional offshore-appendant economy by IP 8. The analysis of large-scale planning projects from political perspectives has for example already been conducted for 'Stuttgart 21' (BRETTSCHEIDER, SCHUSTER 2013). 'Stuttgart 21' is a 'controversial building project', in which the city's 'main railway station' is displaced underground (WSWS 2010). It is 'regarded as a prestige project' that causes opposition for years (ibid.). Political actions taken on such kinds of particular planning projects can eventually serve as lessons learned for prospective challenges regarding policy (cf. HÜBNER, POHL 2014: 9). This possibility is emphasized since experience with the young offshore wind industry is still gathered at the present time. Notwithstanding this fact, the exhibition run by IP 8 already supplements the political efforts on offshore-wind energy promotion, which are taken on the regional scale. This is realized by putting emphasis on exhibiting the job possibilities, which are particularly connected to the offshore branch. IP 8 underlines that the positive aspects of this young industry are in this way constantly communicated by means of a permanent exhibition. On the other hand, however, policy can also hamper the public support of offshore wind energy. In this regard it is referred to the statement of IP 9 concerning the *Strompreisbremse* again (cf. passage 4.2). As a lesson learned from this particular instrument, the expert finds that applying political tools with wrong timing results in extensive public discussions (cf. e.g. BADISCHE ZEITUNG 2013). Therefore, such kinds of political means need to be initiated in accordance with the progress of the offshore industry. Otherwise, it is stressed, they hamper social

acceptance. In this regard also a steadiness in political directions is requested by IP 4 and IP 7 to provide a stable basis for offshore development.

Also an objectification of offshore-opposing debates is argued to present a necessary condition in order to tackle disputes, which are caused by different utilization forms (IP 9). In this regard it is explained that every interest is potentially organized in an interest group (IP 9). Facing the concerns of the different forms of utilization is argued to be essential for achieving social acceptance of offshore wind energy (IP 7). At the same time, invalid arguments brought forward by opposing groups should be addressed by an objective discussion (IP 9). The basis for such kinds of discourses could be provided by the federal states' spatial development programs for instance (cf. e.g. MINISTERIUM FÜR ENERGIE, INFRASTRUKTUR UND LANDESENTWICKLUNG 2005). IP 9 emphasizes this suggestion since spatial development programs clearly designate priority areas for the different interests. On this basis, an objectification of the offshore debate could be achieved. At the same time, a more nuanced perspective on the discussion should be created in order to underline valid arguments of offshore disputes (IP 9). Additionally, IP 9 and IP 2 argued for an accompanying increase in public communication and explanatory work by means of conventional media, factsheets, flyers and press releases.

It is repeatedly emphasized by IP 8 that an increase of reliability in terms of offshore-related explanatory work is especially important. The aspect of reliability also implies the decrease of bias with regard to offshore wind energy in the public (cf. RENN ET AL. 2014). In order to visualize this point, it is referred to the empirical data collected in the target environment of the exhibition. Here the visitor feedback can serve as a practical counter-check for the reliability aspect, which is addressed in the expert interviews.

Especially the statements 1 and 4 of the face-to-face quantitative interviews give some indication of the insecurity of the interviewed visitors with regard to the information provision on offshore wind energy. It reveals that almost 95% of the volunteering interviewees agree with statement 1 that 'Fascination Offshore' gives a comprehensive overview on the topic of offshore wind energy. Notwithstanding this result, 50% of the volunteering visitors taking a position agree with statement 4 that the exhibition provides a single-sided perspective on the offshore wind energy branch. The other 50% of the interviewees who position themselves however disagreed with statement 4. Additionally, also the number of missing responses increases for statement 4 in contrast to statement 1. This result is not representative. Still it can give some indication on the visitors' opinion concerning the reliability of the exhibition. That is, concerns on the reliability of 'Fascination Offshore' seem to become apparent from the responses on the statements 1 and 4.

Moreover IP 7 and IP 8 argue that public criticism continuously needs to be taken serious by the offshore wind energy branch. This implies to work on the expressed concerns systematically. Such permanent efforts are on the long-term scale deemed to increase the social acceptance of offshore wind energy (IP 8). The outlined necessity to investigate in public concerns is reinforced by the specialist literature. A number of studies for instance examine public negative responses with regard to renewables planning projects (cf. e.g. DEVINE-WRIGHT 2011; O'KEEFFE, HAGGETT 2012; UPRETI 2004).

Preliminary summary

The previous paragraphs facilitated an understanding of different conditions, which need to be met in order to enable 'Fascination Offshore' to help supporting social acceptance of offshore wind energy in Germany. In conclusion, synchronized political work on offshore wind energy accompanying the offshore industry's development, objectifications of offshore-related debates, the strive for an increased reliability of offshore-related explanatory work, taking public concerns serious and continuous reflection on information-providing tools such as PR activities are concrete answers to sub-question 2. These responses are ascertained as comprehensible as possible given the constraints of this thesis.

In order to complete the steps of the research model for answering the second sub-question, the participation ladder by ARNSTEIN is applied in the next section. The following passage aims to shed light on a hypothetical expansion of the current information-providing exhibition concept. This consideration is deemed valuable since the initial argumentation with regard to ARNSTEIN's participation ladder was restricted to the existing exhibition concept (cf. passage 2.5.1). By investigating potential transformation possibilities of 'Fascination Offshore', insight in prospective possibilities of shaping future concepts could be attained. Furthermore this procedure is deemed to provide impulses for the analysis of strengths and weaknesses of the exhibition (cf. passage 5.2.3).

Arnstein's ladder of participation

The initial attribution of the exhibition concept via the participation ladder model by ARNSTEIN was already conducted in passage 2.5.1. This can be justified with the fact that 'Fascination Offshore' was originally characterized as an information-providing tool of the Foundation (cf. Appendix (7.2)). It was therefore found that the design of the exhibition could directly be ascribed to the step of 'informing' on the ladder of participation (cf. Figure 6). The discussion of 'Fascination Offshore' in the face of this model did however not yet continue with demonstrating possibilities to take further steps on the ladder. For this reason, the following paragraphs illustrate advantages and disadvantages, which could accompany a potential shift of the exhibition concept on ARNSTEIN's model. Simultaneously, some indications are given of how different degrees of participation can contribute to social acceptance. These explanations give further insight in constraints and opportunities that could be connected to a potential transfer of 'Fascination Offshore' on ARNSTEIN's ladder.

ARNSTEIN argues for the existence of two stages, which belong to the superior level of nonparticipation. Nonparticipation represents the lowest level in the participation ladder model (cf. Figure 6). The two appendant stages are called 'manipulation' and 'therapy' (ARNSTEIN 1969: 217). With regard to the initially outlined position that the German Offshore Wind Energy Foundation takes, it becomes apparent that the lowest steps are not appropriate to transfer 'Fascination Offshore' to. This is reasonable in the light of the explanations given by ARNSTEIN. The author characterizes the lowest stages as 'to enable powerholders to "educate" or "cure" the participants' (ARNSTEIN 1969: 217). This explanation clearly demonstrates that the nonparticipation level is not compatible with the objective of the Foundation. It would thus only be appropriate to strive for an extension of the exhibition into the direction of a higher degree of participation.

The step of 'informing', which the exhibition currently belongs to, is assigned to the level of tokenism by ARNSTEIN. Even despite admitting that 'citizens may indeed hear and be heard', ARNSTEIN explains that this level

still misses the power of the public to be respected by the powerholders (1969: 217). With regard to the target of 'Fascination Offshore' to support social acceptance of offshore wind energy by providing information, the current classification is confirmed. The critique by ARNSTEIN however makes aware of the fact that a change of the status quo cannot be assured on the present level of participation. A transfer of this understanding to the offshore wind energy debate reveals that the current exhibition concept only provides very limited options in terms of public participation. In this connection, the question arises whether it would be advisable to climb higher on the participation ladder and simultaneously increase public participation. A theoretical basis for answering this question was provided in passage 2.5.1. The considered arguments, which were adopted from GROSS (2007), HÜBNER and POHL (2014) and RENN ET AL. (2014), are referred to in the following discussion.

Against the theoretical awareness gained in the specialist literature, it does not appear reasonable to strive for leveling the current exhibition concept of 'Fascination Offshore' up. This can be underlined by the awareness that the exhibition in its present design does not offer 'structures as joint policy boards, planning committees and mechanisms for resolving impasses' (ARNSTEIN, 1969: 221). These instruments would however be required from the sixth stage onward. Concretely this means that starting from the stage of 'partnership', more sophisticated characteristics are necessary in order to ensure growing degrees of public participation.

The exhibition currently serves the aim to support social acceptance of offshore wind energy in Germany by providing information to interested laymen. Its initial design therefore did not strive for distributing power between the public and powerholders. In its current concept it can neither serve power-balancing nor negotiating processes concerning the offshore wind energy development in Germany. Acknowledging this awareness, the information-providing function of 'Fascination Offshore' can be considered as correctly ascribed to the third stage of ARNSTEIN's model. The formulated condition to 'hear and be heard' is met by the exhibition. That is, it offers contact details as well as feedback sheets additionally to providing offshore-related information (ARNSTEIN, 1969: 217).

5.2.3 Answering sub-question 3

Sub-Question 3: *Which advantages and which disadvantages does the format of the present exhibition of the Foundation have for supporting social acceptance of offshore wind energy in Germany?*

The research model (cf. passage 2.8) indicates that sub-question 3 is approached on the basis of the qualitative expert interviews first and foremost. This is justified by the fact that the qualitative data is purposefully tailored for the present research objective (cf. passage 4.2). For conducting a listing of advantages and disadvantages that the current exhibition comprises, the specialist viewpoints therefore serve as valuable sources of knowledge. Additional awareness with regard to sub-question 3 is however also obtained from the visitor feedback. The literature review indicates certain positive or negative factors at some points as well.

The following investigation in benefits and shortcomings of the exhibition concept is conducted with the help of a SWOT-analysis (cf. e.g. GABLER WIRTSCHAFTSLEXIKON n.d.b; RÜRUP ET AL. 2004: 276). This type of analysis on the one hand contains the assessment of one's own activities. It is divided into the detection of positive and negative aspects. In the SWOT-analysis, these are called strengths and weaknesses. For the present study, the conducted strengths-weaknesses-analysis focuses on the activities of 'Fascination Offshore' itself. That is,

positive and negative aspects connected to the environment, in which the exhibition operates, are investigated. On the other hand, opportunities and threats represent the second part of the SWOT-analysis. These aspects display prospective chances and risks. They refer to the external environment of 'Fascination Offshore' rather than applying to the exhibition concept itself. In other words, the investigation in perspectives on future opportunities and threats contrast the identification of current strengths and weaknesses in a SWOT-analysis. Also, the two parts take place in different research areas.

It was already explained that the strengths and weaknesses of the SWOT-analysis focus on the exhibition itself. This is why the first part of the SWOT-analysis can be described as an internal examination. The opportunities and threats on the other hand were characterized as prospective investigations. Their analysis centers on chances and risks, which possibly exist outside the current exhibition concept's frame. This is why the second part of the SWOT-analysis focuses on external aspects with reference to 'Fascination Offshore'.

Both parts of the analysis are displayed in Table 7. The overview concretely outlines the strengths and weaknesses with regard to the present concept of 'Fascination Offshore' as they were detected in the conducted research. In this connection it is underlined that rather the most decisive aspects are displayed. This is due to the limited extent of the present research. Also, the table proposes opportunities and threats. It is again stressed that these perspectives illustrate potential chances and risks outside the current environment of 'Fascination Offshore'. In light of the constraints of this study it appears reasonable that these considerations for prospective opportunities and threats cannot be covered completely. They are adopted from awareness gained from the research findings or deduced from weaknesses of the internal analysis. Their listing does not claim for completeness as regards content. Still they are considered as meaningful components of the analysis.

Internal analysis of strengths and weaknesses of 'Fascination Offshore'	
Strengths	<p>Some interviewed expert reveal that a broader information provision regarding offshore wind energy in Germany would be beneficial for supporting its social acceptance nation-wide. This is especially argued for with the creation of more differentiated perspectives on the offshore topic and an objectification of controversial offshore-related discussions. The current travelling concept of 'Fascination Offshore' serves the inner land. This geographical range of the exhibition can consequently be characterized as a particular strength.</p> <p>The vast majority of the visitors giving feedback on the exhibition affirmed the information boards to be understandable. That means that the initial target of designing the information in an understandable manner for interested laymen is fulfilled in the current exhibition concept.</p> <p>The particular information presented on occupation fields in the offshore wind energy sector are commended as very realistic descriptions by the visitors of the exhibition. This circumstance displays a particular strength of 'Fascination Offshore' for the following reason. One information board and one movie at display at 'Fascination Offshore' address the diversity of affiliated job possibilities. In addition, the offshore-related value-added chain is introduced, demonstrating a German-wide spread of contributing suppliers. The visitors' identification with the introduced job possibilities indicates the possibility to enhance the understanding of a national benefit resulting from offshore-related research, development and production.</p> <p>The inquiries at display at the exhibition locations underline the intention of the German Offshore Wind Energy Foundation to hear the visitors' voices. Moreover the contact with the Foundation is offered to the interested audience. These aspects illustrate strengths of the current exhibition.</p>

	<p>Furthermore the face-to-face interviews with visitors of the exhibition reveal that each of the interviewed persons feels better informed after visiting ‘Fascination Offshore’. The information-providing target of the exhibition is confirmed by the interviewed visitors.</p> <p>The term ‘understandable’ is introduced by RENN ET AL. (2014). It is further outlined for this condition that achieving acceptance of an activity under dispute is more likely when the planning project is understood (ibid.). ‘Fascination Offshore’ offers information on offshore wind farms. Therefore the exhibition also serves approaching the particular consideration by providing knowledge on offshore wind energy planning projects to the public.</p> <p>The same accounts for the ‘benefit’ that was outlined as yet another prerequisite for achieving social acceptance. It was already explained earlier that the social support of renewables projects is more likely to rise when the individual benefit rises (cf. RENN ET AL. 2014). The possibility to learn about one’s own benefits is further argued to display the only possibility to appraise the individual advantages or disadvantages in the light of a renewables project (ibid.). The exhibition contributes to this specific consideration by giving explanations on offshore wind energy. On this basis visitors can assess their personal benefit in the face of offshore wind energy planning projects.</p>
<p>Weak- nesses</p>	<p>As a distinctive weakness of the exhibition, visitors repeatedly name the absence of particular topics or the lack of in-depth information on specific subjects. Missing information is criticized for technical aspects of offshore wind power plants among others. Regarding critique on the total absence of topics, the visitors especially point at comparing the offshore technology with other energy generating sources and presenting it in the context of a prospective energy mix.</p> <p>Moreover it becomes apparent from the visitor feedback that the exhibition is perceived to present a single-sided perspective on topics such as the impacts of offshore wind energy on the environment. Bias can therefore be stated as another weakness resulting from the insufficient provision of information on particular topics.</p> <p>Also it reveals from the empirical research that the visitors often state exhibition pieces to be missing. Based on this critique, parts of the vividness of the communicated topic get lost. This awareness is supported by expert knowledge. It is repeatedly emphasized in the qualitative interviews that visualization makes the offshore topic come alive, since offshore energy generation in large parts takes place outside the visible range of the society. For this reason the expresses critique must be considered as another shortcoming of the current exhibition concept.</p> <p>Even despite the fact that certain improvement is conducted even during the exhibition period, yet another drawback can be constituted. It addresses the rather static character of the exhibition with regard to approaching topics of current interest. Exemplarily the broadly discussed subject of grid connection from the northern to the southern German regions is not included in the current exhibition. The criticized transmission line is however directly connected to the wind energy produced in the North and Baltic Sea. Since this topic causes widespread disputes also among the visitors of ‘Fascination Offshore’, a missing dynamic in the adjustment of its contents can be named as a weakness of the exhibition concept.</p> <p>While the former exhibition on board of the MS Greundiek had the ship at its disposal, which served as a tourist magnet, the present exhibition does not feature comparable attractions. Being aware of this circumstance, the current locations are aimed to be chosen simultaneously with side events taking place. This is however not always realizable. Resulting, ‘Fascination Offshore’ is partially lacking an appealing factor for additionally attracting potential visitors.</p> <p>A further shortcoming of the current exhibition reveals with regard to the analysis of the trade-off between the degree of information richness and the level of aggregation contained in the information providing concept of ‘Fascination Offshore’. The appendant analysis resulted in the awareness that the current weighting of these two facets displays a weakness of the exhibition.</p> <p>One last distinctive drawback of the exhibition concept refers to the term ‘identity’ as addressed by RENN ET AL. (2014). ‘Fascination Offshore’ does not allow for a purposeful support of the</p>

	<p>emotional identity with a particular offshore wind energy project. This circumstance results from the initial design of the exhibition. It was decided to give a more general introduction to the offshore wind topic. By aiming at providing an overview on the various offshore-related topics rather than focusing on specific projects, the creation of an individual identity with a particular offshore wind farm cannot be supported.</p>
	<p>External analysis of opportunities and threats to ‘Fascination Offshore’</p>
<p>Opportunities</p>	<p>With regard to the specialist interviews it becomes apparent that the reliability of tools such as ‘Fascination Offshore’ displays an important prerequisite for enhancing the social acceptance of the offshore branch. Considering the need for a reliable position that an acceptance-supporting tool continuously adopts, this aspect can help supporting a successful communication of offshore wind energy in order to enhance its social acceptance.</p> <p>Taking public critique serious displays yet another chance to enhance the social acceptance of offshore wind energy, it is argued in the qualitative interviews. This is because reacting on peoples’ concerns indicates the general recognition to be given a voice and to be heard. Being concerned with criticism signals the official side’s willingness for a two-way-communication. This can apply for involved industrial, political, planning or mediating institutions. The appeal is also transferrable to tools, which are utilized for supporting the same objective.</p> <p>Concerning the detected unfavorable trade-off between the current information richness and the level of aggregation, the following awareness can be concluded as a general opportunity. A well adjusted weighting according to the IRA approach can help increase public reliability in the face of planning projects. Also the continuous strive for an optimal situation can serve the reduction of bias. This opportunity goes along with the outlined chance regarding the reliability.</p> <p>Also an objectification of discussions on offshore wind is stressed to be important in the attempt to support the social acceptance of this young industrial branch. Legal regulations on spatial development plans are named as documents, which can provide a robust basis for objectifying disputes of different interest groups in the German exclusive economic zone. This can exemplarily be underlined with different priority areas that are designated in the particular spatial development plans. Such kinds of objective discussions contain the possibility to disprove invalid arguments and allow for more nuanced perspectives on the offshore wind energy debate.</p> <p>In order to further enhance the social acceptance of offshore wind energy, its appendant value-added chain should be communicated countrywide. Since the offshore wind topic is determined to be less present in the everyday life of the inner land, the coastal regions have also learned better about affiliated economic benefits. Distributing this knowledge also to the central and southern German regions displays an opportunity to the nation-wide support of social acceptance of the offshore wind energy sector.</p> <p>Due to the legal restrictions for erecting offshore wind farms in the German territorial waters it becomes apparent that the offshore topic in large parts takes place outside the visible range of the public. The more important it is to make the offshore topic come alive by means of visualizing tools. An enhanced learning effect on the part of the public goes along with interesting illustrations of the offshore wind subject, as it is underlined in the expert interviews.</p> <p>The visitor critique regarding missing information on the offshore share in the prospective energy mix can be turned into a chance for supporting its social acceptance. Illustrating the role that offshore wind energy takes for achieving the German nuclear phase-out allows a more comprehensive understanding of the need to meet the expansion targets.</p> <p>Yet another opportunity for supporting the social acceptance of offshore wind energy can be formulated as addressing current topics of interest. This appeal displays a lesson learned from the rather static character of ‘Fascination Offshore’ with regard to the selection of topics it illustrates. Continuously checking for the currentness of particular topics allows for a more dynamic information-providing character. This is because specific disputes such as the high-</p>

	<p>voltage transmission line from the north to the south of Germany evoke public concerns. Addressing such kinds of controversial topics can help prevent disputes and avoid escalations.</p> <p>A further opportunity for enhancing the social acceptance of offshore wind energy reveals from the qualitative interviews. One expert refers to neutral opinions, which still exist in connection with the offshore wind energy sector. The interviewee outlined these neutral perspectives as possibilities to do explanatory work on and influence the opinions with a positive impact.</p>
Threats	<p>A single-sided perspective on the offshore wind energy branch paves the way for public bias. Well-considered information provision on the one hand displays an opportunity for supporting the reliability of communication tools. Poorly balanced information or euphemistic descriptions can on the other hand present a threat to them.</p> <p>The total absence of particular topics in offshore-related discussions on the part of official institutions can contain the same risk as outlined for poorly balanced communication of specific subjects. That is, reliability can be lost as well as bias can be caused by missing a communication of certain aspects of the offshore wind energy sector.</p> <p>The same applies for a too static information presentation. Missing dynamics in choosing and facilitating particular topics of currentness in the public are likely to cause the same consequences as detected for single-sided perspectives and the absence of topics.</p> <p>The reliability of an information-providing source can moreover suffer from the risk of not or only insufficiently taking public critique serious.</p> <p>The expert interviews demonstrate that the fears of the tourist associations in the face of offshore wind farms to scare tourists away from the coast are not verifiable. The specialist argumentations are based on the number of overnight stays. Even despite this fact, conflicting interests such as outlined for the tourism sector can display sources of long-lasting disputes. They can do significant harm to the offshore wind industry.</p> <p>Despite the fact that the offshore wind industry comprises a value-added chain all over Germany, the coastal regions are detected to know more about the offshore topic. It becomes apparent in the specialist interviews that a lack of understanding of fundamental connections can be more likely to lead to opposition in the southern regions. This north-south-gap regarding the offshore wind energy sector displays a threat to its social acceptance.</p> <p>Also the empirical research underlines that too extensive expansion of the offshore wind industry can cause opposition. This risk is especially important in the light of former acceptance changing into rejecting.</p> <p>The offshore wind energy sector was already characterized as in many parts taking place outside the visible public range. Therefore the visualization of the offshore industry displays a continuous risk. This is because missing or insufficient vividness is stated by the interviewed experts to result in a reduced learning effect with regard to the offshore sector.</p> <p>Additionally it is pointed at the three realms of social acceptance, being the local, the market and the socio-political sphere. As soon as an information-providing tool restrains itself for serving one of the spheres, it could diverge from addressing the others. This could be considered as a potential threat to the intention for supporting social acceptance of offshore wind energy in its entirety.</p> <p>As a final aspect the green-to-green debate (WARREN, BIRNIE 2009) with regard to offshore wind energy is addressed as a threat. That is reasonable since the ecologic discussion regarding offshore wind energy holds arguments to fuel both supporting and opposing viewpoints on this particular sector. This circumstance is reinforced by the visitor feedback of the exhibition.</p>

Table 7: SWOT-analysis

Contemporary planning spectrum

The explanations on the contemporary planning spectrum in passage 2.5.2 shaped an understanding of the two theoretical extremes existing in this regard. Also they allowed for the awareness that the planning approach of German offshore wind farms can be characterized with the technical rationale. Moreover, the planning for offshore wind energy projects was outlined as a coordinative type. The exhibition 'Fascination Offshore' was further determined as a part of the planning strategy. This is because the exhibition communicates information on offshore wind energy and by those means aims at creating social acceptance of this branch. The initial explanations however concluded with that determination. The present section therefore intends to create awareness of the consequences that a transition of 'Fascination Offshore' on the contemporary planning spectrum could be accompanied with. Acknowledging the findings of the present research, the following paragraph also provides an insight in the potential need to undergo such kind of transformation.

The German Offshore Wind Energy Foundation initially presented itself as an 'independent institution [...] acting as a unified voice' (STIFTUNG OFFSHORE WINDENERGIE 2009: 6). Based on this quote it appears that 'Fascination Offshore' not necessarily coincides with the technical rationale that was determined for the German offshore wind planning approach (cf. e.g. ROO 2007). Pointing towards the other extreme of the contemporary planning spectrum, the communicative rationale generally contains inter-subjective elements (cf. e.g. HU ET AL. 2013). Different stakeholders groups listening to one another can be named as a further particular characteristic of the communicative approach. Mutual understanding is moreover contained in the communicative perspective.

If 'Fascination Offshore' was beneficial for creating an understanding of the influence of offshore wind farms on the social and ecological environment, it would support clarifying appendant advantages and disadvantages. Consequently, the exhibition would then also contain further elements of the communicative planning approach. However, the visitor feedback detects single-sided perspectives on particular topics, which are communicated in the exhibition. Also bias is ascertained as an aspect of importance in the quantitative data analysis. Based on these empirical findings, elements of communicative planning cannot be identified for the current design of 'Fascination Offshore'.

Even though the exhibition is intended to display an information-providing tool to support social acceptance of offshore wind energy in Germany, particular shortcomings are contained in its current design. Trading the path of a more communicative strategy in the attempt to make sense of accompanying effects of offshore wind energy development would require an adjustment of the exhibition's present concept. Recommendations in this regard are formulated in passage 5.5. Before, the main research question is approached in the following.

5.3 Answering the main research question

The previous passages answered the three sub-question of the present research by applying the research model. Based on these answers the main research question can be addressed in this section. It is approached in two parts. The first part investigates the exhibition as an instrumental information provision. The second part discusses the opposite perspective. Based on the empirical findings of the research, 'Fascination Offshore' is

questioned to represent an ineffective attempt to overcome offshore obstacles. Afterwards the findings of the two parts are merged in order to create a comprehensive response to the main research question:

Does the exhibition 'Fascination Offshore' display an instrumental information provision for supporting social acceptance of offshore wind energy in Germany or an ineffective attempt to overcome offshore obstacles?

This part responds to the first segment of the research question. It questions the exhibition to display an 'instrumental information provision for supporting social acceptance of offshore wind energy in Germany'. Based on the statement of the German Offshore Wind Energy Foundation, 'Fascination Offshore' can be confirmed to present an information-providing tool. The main objective of the exhibition can further be outlined as the support of social acceptance of offshore wind energy in Germany.

Regarding social acceptance, the qualitative research reveals one particular consistent finding in accordance with the opinion of the Foundation. It is the recognition that striving for universal social acceptance of offshore wind energy in Germany is considered as an unrealistic target. Still, the awareness is stressed by the interviewed experts and the investigated literature that overcoming social obstacles in regard to offshore wind energy is crucial for a successful implementation of the *Energiewende*. By doing public explanatory work with the help of 'Fascination Offshore', the Foundation aims at contributing to this identified important aspect.

The exhibition's concept is reinforced by the conducted empirical research. The interviewed experts repeatedly underline the information provision of 'Fascination Offshore' to present a necessary means for its main objective, the support of social acceptance of offshore wind energy in Germany. In the light of the qualitative research, the exhibition is conducive for its target. Still, 'Fascination Offshore' focuses on communicating offshore-related information to interested laymen. Whether this emphasis sets limits to the exhibition's main objective is questioned in second next part. Afterwards an answer to the main research question is formulated.

This part concludes from the findings of the conducted research to assess whether the exhibition displays 'an ineffective attempt to overcome offshore obstacles'. The qualitative interviews shape the understanding that offshore activities in large parts take place outside the visible range of the public. The experts therefore lay emphasis on the visualization of the offshore wind energy topic by information-providing instruments. By those means, the offshore topic comes alive. The visitor feedback on 'Fascination Offshore' reveals that the currently applied exhibition concept partially misses a visualization of the offshore subject though.

In general terms, the quantitative research confirms the introducing character of the exhibition. The visitor feedback however more precisely criticizes the restricted content of the communicated topics. This is also why a mainly positive feedback on the overall appearance of the exhibition is accompanied by critique on the content of the information boards. Deficits are especially addressed in terms of missing in-depth information on certain subjects. The same applies for single-sided perspectives on specific offshore-related topics. Another shortcoming is formulated as the complete absence of particular aspects.

The addressed drawbacks display important findings from the visitor feedback on 'Fascination Offshore'. These quantitative findings help formulating a consistent picture to the discussion of this part. In combination with

the discussion of the first part on the exhibition as ‘an instrumental information provision’, this part allows formulating an answer to the main research question in the following.

It reveals from the previous parts that a concrete attribution of the exhibition to one of the extremes of the research question cannot be conducted. This is partly underlined by the diverging aspects ascertained in the parts above. Also the discussion of the research sub-questions in passage 5.2 adds to this awareness. Distinct characteristics for both dimensions of the main research question could further be detected in the overall course of argumentation conducted in the present research.

Regarding the exhibition’s potential as an ‘instrumental information provision’, the qualitative research stresses the value of the educational work of ‘Fascination Offshore’. The specialist literature as a second knowledge source of this study reinforces the general importance of public explanatory work on the offshore wind energy topic for supporting its social acceptance (cf. e.g. RENN ET AL. 2014; HÜBNER, POHL 2014; WOLSINK 2000). The meaningful character of ‘Fascination Offshore’ can be underlined by these knowledge sources.

The third source of knowledge however demonstrates shortcomings of the information provided in the exhibition. Concretely, parts of the quantitative research criticize the information contained in the information boards as being insufficiently communicated. This critique points into the direction of the exhibition as an ‘ineffective attempt to overcome offshore obstacles’. The findings of the quantitative research contrast the findings outlined before. Due to these diverging characteristics, ‘Fascination Offshore’ cannot be assigned to one single dimension of the main research question.

With regard to the shortcomings, which were ascertained for the present exhibition concept, the following recognition can be formulated. Working on the reduction of weaknesses, which are contained in the current exhibition, could be beneficial for the Foundation in order to fulfill the main objective of ‘Fascination Offshore’. In other words, the acceptance-supporting function of the exhibition, which was confirmed by the qualitative research, could be enhanced by working on ascertained drawbacks. The SWOT-analysis listed distinct weaknesses, which were detected during the conducted research (cf. Table 7). Building on this obtained knowledge, recommendations are formulated in passage 5.5 for approaching the identified weak points of the current exhibition concept. Before, the acquired findings of this research are summarized with the help of the conceptual model in passage 5.4. This section also serves as a connecting part between the answers of the research questions and the concluded recommendations.

5.4 Discussion

The answers to the research (sub-) questions already concluded that the exhibition concept of the Foundation still offers room for improvement. This section bridges the findings of the passages 5.2 and 5.3 to the recommendations formulated in passage 5.5. It does so by summarizing the acquired data of this study in the light of the broader approaches used in the research model. These are the IRA approach, the contemporary planning spectrum and the participation ladder model by ARNSTEIN. The research model can again be characterized as the core of the conceptual model (cf. passage 2.9). Therefore the research findings of this study are ultimately bundled in the frame of the conceptual model of this study.

Each of the following paragraphs concludes one of the three named approaches. Also, every paragraph finishes with an outlook on recommendations, which are drawn in the next passage. That is, the following paragraphs identify classifications, which are subsequently used to group the suggestions in passage 5.5. These contain the perspectives 'what is communicated', 'how is communicated' and 'the scope of an information-providing tool'.

The IRA approach helped understanding the recurrent critique of the quantitative research. Initially, the main target group of the exhibition concept was outlined as interested laymen by the Foundation (cf. Appendix (7.2)). The information, which is communicated by 'Fascination Offshore', was consequently kept at a basic level. The visitor feedback mostly confirmed the introducing character of the exhibition. However, the analysis of the quantitative data also found that the visitors repeatedly criticized the information provision of the exhibition concept. The application of the IRA approach therefore not only confirmed the criticism of the visitor feedback. Based on this approach, also an explanation to the identified shortcoming of the exhibition could be given. That is, the currently applied trade-off between the information content and the aggregation level are not yet well-balanced in the exhibition. This aspect is revisited in passage 5.5. In that section the perspective 'what is communicated' represents one class of recommendations.

The second approach used for addressing the sub-questions is the participation ladder by ARNSTEIN. Already in passage 2.5.1 it was found that levels of participation can be brought into connection with perspectives of social acceptance. The subsequent attribution of 'Fascination Offshore' resulted in the level of tokenism. More precisely, the exhibition concept could be assigned to the 'informing' stage of ARNSTEIN's ladder of participation (cf. Figure 6). In light of the target of the Foundation it was not found valuable to consider a shift of the exhibition concept to a lower stage of participation. This is because the Foundation does not aim to 'educate' or 'cure' people with regard to offshore wind energy in Germany (cf. passage 5.2.2). It was however also not deemed realistic to strive for an extension of the exhibition concept to a higher level of participation. This awareness became apparent against the background of the specialist literature. As it was argued in passage 2.5.1, increasing participation possibilities for the public on a renewables planning project are likely to result in the paradoxical phenomenon of decreasing its social acceptance. Based on this recognition, the objective of 'Fascination Offshore' could not be served when transforming the current concept to a higher level of participation. The recommendations, which are formulated in the next passage, take this awareness into account. The second perspective therefore points into the direction of how communication on the stage of 'informing' can be enhanced.

The investigation in the contemporary planning spectrum revealed that the planning approach of offshore wind projects in Germany can rather be assigned to the technical rationale. The exhibition under investigation could further be characterized as a tool of the planning strategy. Concerning its main objective, the support of social acceptance of offshore wind energy in Germany, the exhibition should tend to contain rather communicative aspects of the planning spectrum (cf. Figure 7). The interviewed experts largely revealed a positive attitude towards the educational work that 'Fascination Offshore' performs (cf. passage 4.2). Still it was found that the adoption of further inter-subjective elements in the exhibition would require a shift on the planning spectrum. Since 'Fascination Offshore' displays an information-providing tool of the planning strategy of offshore wind

energy projects in Germany, such kind of disengagement would certainly exceed the current exhibition's scope. The 'scope of an information-providing tool' is therefore addressed as the third perspective of recommendations formulated in passage 5.5.

5.5 Recommendations

The recommendations in this passage are based on the research results and appendant discussions. They can be directed towards the German Offshore Wind Energy Foundation. The recommendations are aimed at contributing to the main objective, which was outlined for 'Fascination Offshore' – the support of social acceptance of offshore wind energy in Germany. The following suggestions are subdivided according to three different perspectives. First, it is outlined which information is advisable to be communicated. Second, recommendations are drawn with regard to how communication is suggested to take place. The third group of formulated recommendations refers to the scope that the information-providing tool reaches.

From the perspective of **what is communicated** via 'Fascination Offshore', the empirical research revealed some specific shortcomings. A lack of in-depth information with regard to particular subjects was criticized by the visitors. Also single-sided perspectives on specific offshore-related issues were critically addressed by the visitors. The outlined criticism in large parts applied to environmental, technical and financial aspects of the offshore wind energy projects in Germany. Also comparisons between offshore wind energy on the one hand and further available renewables as well as conventional electric power generation forms on the other were requested. Therefore it would generally be advisable to broaden the communicated offshore-related aspects by the empirically detected subjects. Concretely, the following suggestions could be proposed.

The qualitative research found a missing understanding of the fundamental connection of offshore wind energy for the overall renewables expansion targets (IP 7). Besides this detection it was also the recognition of the researcher that the significance of the offshore wind energy for achieving the nuclear phase-out in Germany is not communicated sufficiently in the exhibition. It could explicitly be suggested to include the goals of climate control and renewable shares on the (inter-)national level in the presented information. Based on this recommendation, the significant position of the offshore wind energy generation for a successful implementation of the *Energiewende* could be illustrated (cf. FRAUNHOFER IWES 2013: 51).

Regarding the financial expenses of offshore wind projects, which were critically addressed in the visitor feedback, it is advisable to do explanatory work on the subject of external costs. The recognition is widely accepted by specialists that nuclear power plants can in fact no longer be operated cost-efficiently when taking their external costs into consideration (cf. e.g. HICKEL 2011). The situation displays similar for other conventional energy generating sources. The European Commission recently confirmed this awareness in a conducted study (EC 2014). The investigation comes to the result that 'renewables are comparable if not even cheaper than energy sources such as coal' when 'external factors, which are currently not reflected in market prices, such as climate and health costs' are included (RENEWABLE ENERGY WORLD 2014). Also the media and different organizations increasingly communicate the acknowledgement of this understanding to the public (cf. e.g. BEE 2014; HANDELSBLATT 2014; SPIEGEL 2014). Including these kinds of explanations in the public information provision tool of the Foundation could contribute to fulfilling its objective.

Moreover it was found in the qualitative research that it is recommendable to communicate the learning curve of the offshore wind energy (cf. FRAUNHOFER IWES 2013: 51). Also the onshore wind energy which is nowadays operating at a cost-effective level (cf. e.g. WINDMONITOR n.d.) needed to collect experience on the different fields of its life cycle. Therefore it is advisable to inform about the learning curve of the offshore wind energy sector in Germany for enhancing the understanding of its financial expenses.

It can further be recommended to carefully update communicated offshore-related topics with regard to their currentness in the events of the day. Within the past years, press releases for instance increasingly reported about public concerns regarding impacts of offshore wind farms on the environment (cf. e.g. SPIEGEL 2010; TAZ 2012; FAZ 2012; NABU 2014). Also worries of the tourism industry were continuously addressed by the media (cf. e.g. NEUE ENERGIE 2014; NORDDEUTSCHE NEUSTE NACHRICHTEN 2014; SCHWERINER VOLKSZEITUNG 2014). Most recently, the planned high voltage transmission lines from the northern coastal regions to southern Germany is highly disputed in the inner parts of the country (cf. e.g. FAZ 2014; SZ 2014; NDR 2014). This dispute highlights the relevance of the offshore wind energy subject for the south. By addressing aspects, which are currently debated, the reliability of the communication tool 'Fascination Offshore' could be enhanced. Additionally, the qualitative research of this thesis found that bias could be counteracted by facing critique rather than neglecting it. This could support strengthening the mediation position, which the Foundation takes, also in the eyes of the public (cf. also BRETTSCHEIDER, SCHUSTER 2013: 209ff).

As it revealed from the literature, the public cannot be expected to be informed about offshore wind planning strategies or approval procedures (cf. HÜBNER, POHL 2014: 8). IP 7 additionally underlines this recognition. The interviewed expert states that a delayed action on the part of the public is usual. This circumstance should be taken into account by the planning authority. Also for 'Fascination Offshore' in particular, one recommendation can be derived from this statement. It could be advisable for the Foundation to highlight contact points to get informed on offshore wind energy in the exhibition.

In the following, suggestions are formulated for the question **how information is communicated** to the public. The first recommendation refers to the findings of applying the IRA approach to the information content provided by 'Fascination Offshore'. The quantitative research confirms the abstracted placement of the communicated information. The weighting between the information content and the degree of aggregation still offers room for improvement. In order to reach the optimum level, it is recommended to review the currently applied trade-off with regard to the IRA approach.

As an appeal of a more general character, the qualitative research found a need for objectifying ongoing discussions regarding offshore wind energy. This objectification was outlined as a necessary condition for counteracting offshore disputes with competing utilization forms. Exemplarily it can be referred to the concerns of the tourist associations. Revisiting their concerns that tourists could stay away from the coast due to the erection of offshore wind farms, the following concrete recommendations can be formulated. It could be pointed at existing positive examples. These demonstrate the possibility to combine offshore wind energy with touristic activities (KEHMEIER 2013; ALBRECHT ET AL. 2013; WESER KURIER 2014). Also highlighting legally determined priority areas could contribute to an objectification of offshore-related disputes (cf. e.g. MINISTERIUM FÜR

ENERGIE, INFRASTRUKTUR UND LANDESENTWICKLUNG 2005). With regard to public concerns on impacts of offshore wind farms on the environment, such positive trends are already quoted by the media (cf. e.g. ERNEUERBARE ENERGIEN 2014; ZEIT 2013). Concluding these exemplifications, an objective public understanding could be shaped by the proposed suggestion. The objectification of offshore-related discussions can moreover be considered as a useful supplement for the recommendations on 'what is communicated'. This is because an objectified discussion on offshore wind energy helps visualizing the importance of the offshore industry for realizing Germany's nuclear phase-out.

Regarding the methodology of the exhibition concept, the empirical research paves the way for the following recommendation. It is advisable to expand the current exhibition concept by more interactive and visualizing elements. The quantitative research gives indication of a lack of models and the like in order to make 'Fascination Offshore' more exciting and richer in variety. The findings from the qualitative data analysis confirm this aspect. Making the offshore topic come alive is argued to be essential for attracting visitors and to consequently also facilitate knowledge. An optimum learning effect is in the main part stated to be contained in interactive elements since they encourage the visitor to occupy himself with the offshore topic. Lacking attractiveness of an exhibition is found to be likely to result in missing attendance of the public. By implication this would also mean a lack of communication on the topic of offshore wind energy in Germany. To prevent this, it would be advisable for the Foundation to apply increased visualization and more interactive components in its communication means.

One further recommendation can be formulated in this passage. One interviewed expert points at the part of the public, which has not yet formed an own opinion on offshore wind energy (IP 9). The expert emphasizes the opportunity to explicitly address these people with yet a neutral opinion. He underlines that it is possible to so to say support a positive opinion-forming in these cases. In this connection the quantitative research finds 10.6% of the visitors without a clear positioning with regard to offshore wind energy (cf. Figure 16). Adopting the so far suggested recommendations, it is more likely to support the positive communication of offshore wind energy towards persons without a fixed opinion yet. Approaching this specific group of people can therefore be considered as explicitly beneficial for fulfilling the exhibition's objective.

The recommendations for **the scope of the information-provision tool** partly exceed the possibilities of the current exhibition concept. The following suggestions are drawn from the analysis of threats and opportunities (cf. Table 7). To begin with, three recommendations are formulated, which in most parts remain in the current orientation of 'Fascination Offshore'. Afterwards, it is proceeded with suggesting extensions that exceed the current scope of the exhibition under investigation.

The qualitative research found that a tourist magnet is beneficial for the publicity of an exhibition such as 'Fascination Offshore'. Its predecessor had the museum ship MS Greundiek available as a landmark. The current exhibition concept however displays a lighter and more mobile version of the previous exhibition. Therefore it is not equipped with a similar eye catcher. The interviewed experts however strongly emphasize the value of a tourist magnet. Therefore it is suggested to the Foundation to revisit the question of a flagship.

Another recommendation points towards a broader scope of the main objective of 'Fascination Offshore'. This is suggested for the following reason. The specialist literature states that opposing viewpoints to planning projects largely remain in silent disagreement (cf. HORST 2007: 2710). This understanding needs to be considered in the light of the means, which are available for 'Fascination Offshore' to measure social acceptance. The awareness results that an absence of active opposition already seems to fulfill the objective of the exhibition. Concretely, neutral positions and silent opposition are not detectable with the current feedback methods. This is why reconsidering the objective of 'Fascination Offshore' could be advised.

Concerning the data analysis, it is suggested to extend the amount of data, which is collected from the visitors. The postal code could for instance be asked for in the statistics. This would in particular allow drawing conclusions from question 5 on a north-south divide (cf. passage 4.1). Also more generally, receiving more extensive feedback from the visitors can provide additional impulses for continuous enhancement of an information-providing tool. For this reason the instruments for receiving feedback should be chosen carefully.

A recommendation outside the scope of the current exhibition concept refers to the four considerations to form social acceptance (cf. RENN ET AL. 2014). It was found that 'Fascination Offshore' serves the aspects 'understanding' and 'benefit'. 'Self-efficacy' and 'identity' were not detected as being supported by the Foundation's information-providing tool yet. These two aspects are however also emphasized as necessary for creating social acceptance of renewables projects (cf. RENN ET AL. 2014). From this awareness, a recommendation can be deduced. It would be advisable for the Foundation to address 'self-efficacy' and 'identity' in prospective acceptance supporting concepts. Working together with local partners could for instance support the aspect 'identity'. This could be realized by combining a general information framework by the Foundation with concrete identification methods, which are provided by regional players. Residents' gatherings on a particular planning project can for example be named as identity-shaping events on the local scale. Such regional gatherings could contribute to the creation of transparency in order to counteract mistrust and bias as well (cf. e.g. HÜBNER, POHL 2014: 8).

The component 'identity' further bridges to another thought. It refers to the three realms of social acceptance being the local, the market and the socio-political dimensions (cf. WÜSTENHAGEN ET AL. 2007). 'Fascination Offshore' was determined to serve the socio-political realm. It is however argued by WOLSINK (2013) that social acceptance is required in every layer of the society. His argument therefore underlines the 'identity' aspect among others. As a concrete recommendation it would be advisable to create elements, which supplement the current information-providing concept for the socio-political realm. These elements should encompass all three spheres. Exemplarily, it is again referred to the local scale. On this dimension, appropriate communication elements could contribute to shaping an identity with particular offshore wind planning projects. This explanation follows the illustrations of the recommendation above.

5.6 Reflection

The present research started by framing the German offshore wind energy sector. Then it was focused on the exhibition of the Foundation, which displays the object of investigation in this study. Its main objective, the support of social acceptance of offshore wind energy in Germany, led the discussion to the broad spectrum of

social acceptance. The facets, which were considered important for the research objective, were illuminated in the desk research. The study subsequently investigated the data that was empirically collected on 'Fascination Offshore'. In combination with the specialist literature review, the empirical data provided a comprehensive frame for approaching the research objective. In order to position the exhibition from a carefully considered basis, it was additionally made use of three approaches. These approaches were outlined in the research model and included the contemporary planning spectrum, the IRA approach and the participation ladder by ARNSTEIN. Based on the structure provided by the conceptual model, the sub-questions could be answered.

Subsequently, the findings of the sub-questions were merged for positioning 'Fascination Offshore' in its researched environment and answering the main research question. It was found that the exhibition in its current concept does not yet provide an optimal information-provision of its communicated topics. For overcoming the particular shortcomings ascertained in this study, recommendations were directed towards the Foundation. These were formulated for three different perspectives, being 'what is communicated', 'how is communicated' and regarding 'the scope of the information-providing tool'. By taking these recommendations into consideration, the identified room for improvement of the exhibition could be filled.

It can be stated that all used methods contributed to formulating an answer to the research question. The specialist literature review provided a valuable basis for conducting the research. It introduced the realm of social acceptance of offshore wind energy. As such it was important for the disambiguation of the research objective. The literature review moreover provided the basis for preparing the guidelines of the expert interviews. Besides the scientific literature and the expert interviews, the quantitative research can be named as the third sources of knowledge for this study. Also participation ladder of ARNSTEIN, the IRA approach and the contemporary planning spectrum helped positioning 'Fascination Offshore' in its detected environment.

As a characteristic of the investigated exhibition, parts of the visitor feedback were already collected prior to this research. A modification of the former questionnaires at the beginning of this study resulted in a more extensive questionnaire, which was in use from April 2014 on. The additionally conducted face-to-face interviews allowed to check the answers obtained from the written visitor feedback. The qualitative interviews were needed since specific aspects of the research question could not be answered by the visitors. The expert interviews moreover helped the researcher to receive practical understanding of theoretically addressed phenomena. On the basis of the empirical findings, the research question could be answered.

Concerning the generalization of the results obtained from the present research, the following restriction needs to be underlined. The empirically collected data is not representative. This circumstance mainly results from the limited resources of the present research as regards time and money. For this reason also a generalization of the obtained findings can only be conducted within the limits of the outlined constraints.

Regarding the reliability of the results, the researcher attempted to conduct the quantitative face-to-face interviews as similar to each other as possible. It however needs to be stressed that the attendance of the researcher can have influenced the answers of the interviewed persons. Concerning both the quantitative face-to-face interviews and the qualitative expert interviews, the researcher tried to avoid suggestive formulations. Also the reduction of the transcripts to the essential points of the expert interviews was conducted in all

conscience to not change any obtained information. For some statements in this study the interviewer cannot present a clear reference. This is due to the fact that particular findings are based on the researcher's observation during the exhibition periods of 'Fascination Offshore' rather than on scientific facts.

What would be done differently next time partly goes along with the quantitative data collection. First, the questionnaires would be changed in their design. Smaller modifications of the inquiries took place in the present research. In order to not disturb the internal comparability of the results, bigger changes of the original questionnaires could not be conducted though. Second, the face-to-face interviews of the visitors of the exhibition mainly reinforced the feedback obtained from the written inquiries. The slight differences to more positive aural answers are deemed to be connected to the phenomenon of social desirability. Since the conducted visitor interviews are not representative in their amount, the available research resources would be concentrated on further meaningful expert interviews instead.

In the light of the conducted research, it could be interesting to do further research on the information-providing exhibition of the Foundation. On the one hand, the quantitative findings point into the direction of applying further means of communication. It could therefore be interesting to compare the concept of 'Fascination Offshore' with other instruments communicating offshore wind energy aspects. Since the scientific literature is in large parts international, an international comparison could result in meaningful findings. On the other hand, the quantitative questionnaire of the exhibition was found to contain the potential for collecting further data. In expanding the feedback form by asking for the postal code, the north-south divide of social acceptance of offshore wind energy in Germany could be investigated on the basis of visitor feedback rather than solely on the basis of specialist knowledge. This research object appears especially interesting in the light of the dynamic character of social acceptance, as it was outlined in the present research.

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