

Specific business models in the wind energy field in the European Union: comparative study on Romania and Germany

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Abstract: Wind energy has been the main source of renewable energy in the European Union for the last decade, providing sustainable solutions to the demanding task of replacing conventional energy sources and limiting the environmental damage caused by industries worldwide. While the wind energy field in the European Union entered a critical phase in 2013 due to cuts in support schemes in many member states, efficient business models seem to have gained importance in order to overcome these barriers and expand businesses for the purpose of a sustainable future. Based on the knowledge and expertise of wind energy specialists from Romania and Germany collected through questionnaires and interviews, by using the classical Delphi method, the present research offers an overview of the specific sustainable business models characteristics and strategies of wind energy companies in both countries. Secondly, the main trends of the perceptions over the legal environment in Romania and Germany are presented with an emphasis on the positive perspective of the German wind energy field and the pessimistic view of experts in Romania. The relevance of the study lies in the novelty of the subject of sustainable business models in the wind energy, which have been scarcely investigated in the scientific literature and which represent a key element for the thriving of wind energy producers today. Furthermore, the aspects discussed in the current article represent the main factors that have influenced the investment prospects of companies in the field until 2020.

Keywords: wind energy, business model, sustainability, renewable energy, wind parks, Germany, Romania.

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Introduction

As the energy markets in the European Union are evolving permanently, the green energy field must meet new economic and legal requirements that often represent a major challenge for the development of sustainable business

models today. The wind energy represented the main source of renewable energy in the EU in 2013, but has encountered numerous obstacles ever since due to cuts in the renewable energy support schemes. In the fragile economic and political environment of today, renewable energy producers are looking for new ways of ensuring a sustainable development, mainly through the adjustments of their business models.

Similar to the trend of European Union subsidies for renewable energy, Romania entered the wind energy market in 2008 and encouraged investments in the field by granting a number of green certificates for renewable energy producers, different in the case of each type of green energy. The effect was the exponential increase of the installed wind energy and the growth of important foreign investments in the country that brought Romania to a similar position to that of the Netherlands or Greece in 2012 (EWEA report, 2013).

The legal changes of July 1st 2013 represented the beginning of an adverse shift due to the diminishing number of green certificates that triggered protests from wind energy producers and their first reactions of stopping or even withdrawing projects from the Romanian energy market. The wind energy sector in Germany has been stimulated through the feed-in tariff system and reached the first position in the European Union in 2013 with a total of 34660 MW (WWEA, 2014).

Several authors have focused their studies on the theoretical concept of business model and the key elements that would lead to successful business models in different fields (Bruns, 2014; Daum, Gruber, 2002; Chesbrough and Rosenbaum, 2000; Morris, 2005; Osterwalder and Pigneur, 2010; Richter, 2011; Shafer, 2005). Osterwalder and Pigneur (2010) have defined the business models as the main factors of a company contributing to the main objective of a business, respectively "value creation and capturing". The model of Osterwalder and Pigneur (2010) classifies business model elements into nine building blocks, namely value proposition, customer segments, channels, customer relationships, revenue streams, cost structure, key resources, key activities, key partnerships. This framework was confirmed by other authors and adapted through a different structuring of the components. For example, Shafer (2005) divided the elements of a business model into: strategic choices, value network, creating value and capturing value that contain the nine building blocks elements of Osterwalder and Pigneur (2010). Although all the previous authors mention similar components of business models in their theories, the concept has not yet gained a general definition and remains an open subject for further debate and inquiry.

The business models in renewable energy, especially wind energy, have been debated only by a few studies (Frantzis et al., 2008; Marko, 2013; Richter, 2011). Richter (2011) has provided the first classification of business models in the renewable energy field as utility-side and customer-side business models. His approach was confirmed by Frantzis et al. (2008) and Marko (2013), but they neglected the practical research of actual business models elements in each renewable energy field.

In this paper, we analyse the specific business models in wind energy companies that are currently implemented in Romania and Germany, as well as future investment intentions of wind energy producers by considering the political and regulatory standards in the two countries. Our main objective was to provide an overview of the most frequently implemented business model characteristics in the wind energy in Romania and Germany, as these factors contribute significantly to the future adaptation and development of companies in the field. The business models designs included the revenue strategies of selling electricity to different actors of the market, the type of wind energy parks, as well as the ownership profile of wind parks owners.

Secondly, the investments potential depending on the perception of investors on the two different renewable energy environments in Romania and Germany is analysed, in order to gain an insight into the current issues of both countries that are attributed mostly to their legal support systems in the renewable energy field.

We also based our study on two hypotheses, considering the renewable energy environments from Romania and Germany:

H1: The main strategy of wind energy experts is to sell electricity to trading companies, as the main part of the business model.

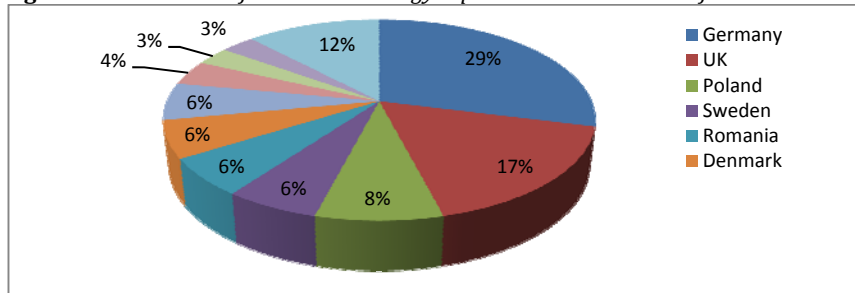
H2: The main trend in the wind energy field until 2020 is going to refer to opting out assets until 2020 in the Romanian renewable energy context.

The paper is structured as follows: the next section will present a detailed analysis of the business model concept and its main components according to the scientific literature. The article continues afterwards with the overview of the main renewable energy, respectively wind energy theoretical business models. Finally, the methodology and findings and conclusions of the practical research are presented.

The development of wind energy in the European Union

The renewable energy sector has experienced a tremendous progress in the last years. In 2012 the renewable energy market covered 14% of the gross final energy consumption as compared to the level of 12.9% in 2011 (Observ'er, 2013). In 2013 wind energy was the main source of renewable energy with large new capacities installed. As shown in Figure 1, Germany was the leading country in wind energy with 3238 MW new installed capacities that represented 29% of the total installed amount of wind energy MW in the European Union in 2013.

Figure 1. Market shares for new wind energy capacities installed in 2013 for EU member states

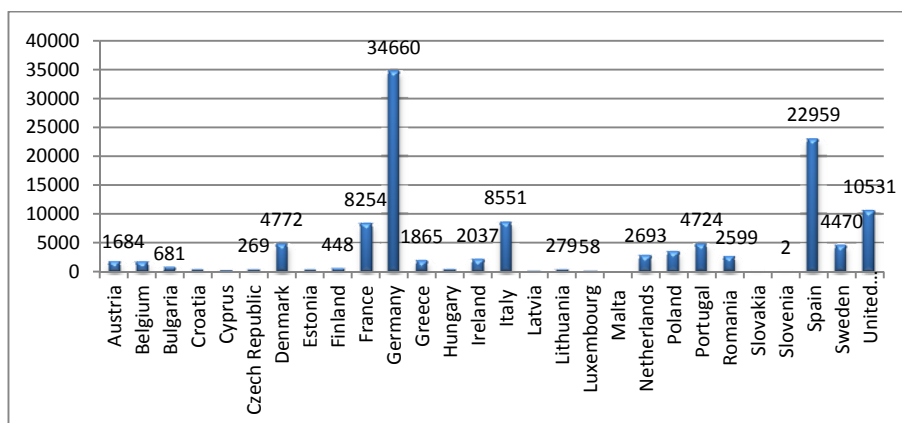


Source: EWEA, 2014, p. 5.

Furthermore, the EWEA report (2014) specified the second position was occupied by the United Kingdom (1883 MW), while Romania (695 MW), Sweden (724 MW), Denmark (657 MW) and France (631 MW) contributed with similar new wind energy capacities, each of them with approximately 6%. The offshore wind energy was reported to have had a record development during 2013 with 1.6 GW of new installed capacities in the European Union.

In 2013 Germany ensured its leader position with more than 34660 MW of wind energy in total, while Romania (2599 MW) had a comparable level to that of the Netherlands (2693 MW), as shown in Figure 2. Spain was the second country which had invested significantly in the wind energy field until 2013, reaching 22959 MW by the end of the year. The development of Romania in the case of wind energy has been exponential in the last three years: from 982 MW in 2011 to 1905 MW in 2012 and finally 2599 MW in 2013 (EWEA, 2013; EWEA, 2014). Germany has also emphasized the importance of the wind energy field by adding more than 3600 MW between 2012 and 2013, according to the same European source (EWEA, 2014).

Figure 2. Wind energy installed (total) in MW at the end of 2013



Source: EWEA, 2014, p. 4.

Due to the European Union target of ensuring 20% of the gross final energy consumption from renewable energy sources until 2020, the renewable energy sector is expected to develop continuously in order to achieve this objective and the wind energy is estimated to be the main green source that will contribute to this progress (EREC, 2011).

What is a business model today?

Although the tendency of analyzing the importance of a business model for the long term development of the company began two decades ago, today this concept is used with numerous meanings. While many use the term business model as the synonym of a company's strategy or structure, its meaning is much wider and consists of many aspects of a business. Various authors have strived to define a business model and its complexity in different ways, however there is no general description accepted by the scientific literature as the official definition of the concept.

Morris (2005) describes a business model as "a concise representation of how an interrelated set of decision variables in the areas of the venture strategy architecture and economics are addressed to create sustainable competitive advantage in defined markets" (p. 726). Other authors, such as Osterwalder and Pigneur (2010) and Chesbrough and Rosenbaum (2000) focused on the components of a business model, as those parts of the business which lead to the creation and capturing of value.

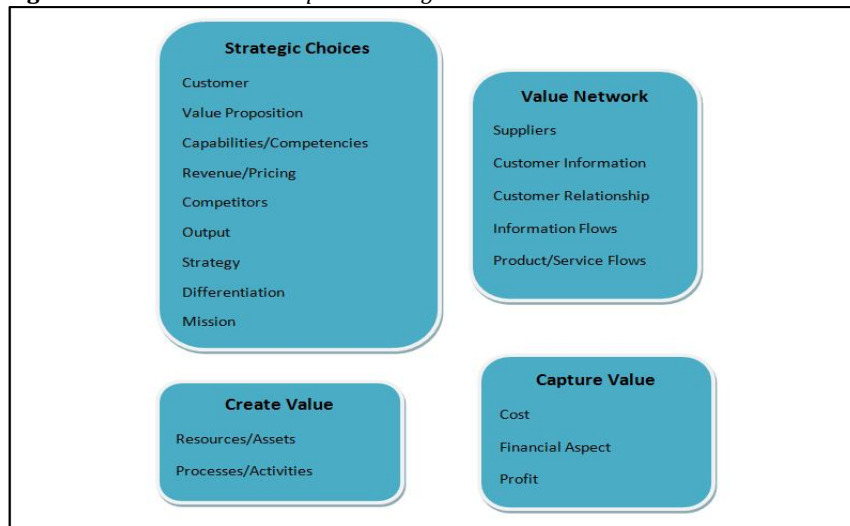
If in the past it was sufficient for a company to obtain the right product and its proper location on the market at the optimal time, today companies have understood that in a more dynamic and competitive environment the key element of success is to have the right business model for the right target group at the proper time (Daum and Gruber, 2002). Value creation is a necessary element for a business, in order to satisfy the permanently changing customer needs and to overcome the rivalry of other companies in the field. Another issue of the value creation is to observe what the beneficiary of a company's services or products actually perceives as valuable, as in the preferences to buy that product and the amount of satisfaction perceived after the product or service was purchased.

Shafer et al. (2005) emphasize the fact that a business model is not synonymous to the term "strategy", but is actually a representation of how a business creates and captures return from that value. In Figure 3, Shafer's (2005) main elements of a business model are summarized, namely: strategic choices, value network, creating value and capturing value. Furthermore, these factors are described through the elements, that should be considered in each case and that contribute to the creation and capturing of the value. For example, strategic choices should consider customer needs and relationships, while capturing value should focus on financial aspects, costs and profits (Shafer et al., 2005).

Bruns (2014) states that a business model ought to contribute to the adaptation of a company to the changes in the environment and to its

innovation, thus increasing the chances of a long-term future for the company according to measurable and non-measurable results. Business models today are necessary for the long-term development and survival of companies in markets with increased innovation, technology, services and price competition.

Figure 3. Business model components diagram



Source: Adapted from Shafer et al. (2005).

Chesbrough and Rosenbaum (2000) identified the main functions of a business model, respectively: (a) articulate the value proposition; (b) identify a market segment; (c) structure definitions of a value chain; (d) cost structure and profit potential definition; (d) define the position of the firm; (e) formulate a competitive strategy. These functions practically include all the elements of business models described by later authors, such as Osterwalder and Pigneur (2010) and Johnson et al. (2008), who provide a similar perspective on the concept. Furthermore, Afuah (2004) claims that a business model contains the activities of a firm, the way and the timing when they are performed in the context of a certain industry in order to create superior customer value (low-cost or differentiated products) and to put the company in a position to appropriate value.

As in the business field, business models also assume taking certain risks, which can lead to errors of judgement and to possible failures of certain planned activities. Shafer et al. (2005) also investigated this part of the business model issue and found four main problems connected to it: (a) making flawed or previously untested assumptions about the future and positioning these assumptions as the core logic of the business model; (b) limiting the strategic choices considered and addressing only a part of the company's core logic; (c) neglecting the value capture part of the business model, while concentrating only on value creation; (d) assuming that the value network will continue

unchanged and thus implying the risk of relying on the same value chain, even when certain changes occur. These risks are always present for implemented business models and for future plans of the company's business. Flaws in assumptions or neglecting certain parts of the business model structure or objectives can lead to deficiencies of expected results that can cause a wide series of consequences on different parts of the business.

In order to permanently achieve innovations and a sustainable development for the company, business models also need to evolve depending on internal and external company factors. Maier et al. (2012) emphasize the importance of innovation for a company's survival and development, but also the management of the implemented innovations, as many companies fail afterwards at recognizing their advantages and productivity brought by the innovative activity. According to Achtenhagen et al. (2013) a company should start using the critical capabilities and strategizing actions for value creation, which would contribute to the design, adaptation and renewing the business model for a sustained value creation. The described process must be periodically monitored, in order to make the necessary changes to business models. The critical capabilities refer to activities, such as identifying and experimenting with business opportunities, using resources in a balanced way and achieving coherence between active leadership, culture and employee commitment. Păunescu (2013) also stresses the importance of developing and innovating in terms of some elements that can be applied in business models: the attention of entrepreneurs on how they manage in the market, such as in the case of the pricing strategy and offering innovative products of high quality with superior warranties that have proven to make companies more performant than traditional ones.

Specific business models in the wind energy field

In the European Union, entrepreneurs have developed business models for each type of renewable energy in the last two decades. Although they represent a major part of the companies' success, the characteristics of renewable energy business models often remain a difficult subject to approach. The typical business models of the wind energy field have been scarcely analyzed by the scientific literature. Few authors have contributed to the theoretical approach of renewable energy business model due to the limited access to wind energy companies and the innovative character of the field, which is permanently changing.

Richter is one of the main authors that have contributed to diverse aspects of identifying renewable energy business models. The most significant contribution that Richter (2012) has brought is a classification of renewable energy business models into two models specific for renewable energy: (a) the utility-side business model; (b) and the customer-side business model, as shown in Figure 4.

Figure 4. The utility-side and consumer-side renewable energy business model scheme



Source: Richter (2012), p. 2485.

According to the study of Richter (2012) the *utility-owned business model* is similar to the traditional model, where the utility ensures the project management and the administrative function. This model is mainly applied to onshore and offshore wind energy projects, as wind energy companies need full control of all functions of their businesses. Furthermore, Frantzis et al. (2008) indicate that this is the most efficient model for the company, as it also benefits from the highest returns. There is also the *consumer-side business model*, which is widely used in the photovoltaic industry, as well as in the case of micro-wind turbines, which are small scaled, usually ranging from a few kilowatts to 1 MW, and can be installed on the consumer property, while the consumer becomes a producer (Marko, 2013).

In another study, Richter (2011) further describes the main elements of utility-side and customer-side business models used in wind energy, as shown in Table 1. According to his research, the utility-side model is widely used for large scale projects between one and a few hundred MWs and is based on a customer interface through power purchase agreements between business to business, as there is no direct contact to the customer.

Table 1. Main elements of the utility-side and customer-side business models in wind energy

	Utility-side business model (recommended for large scale onshore and offshore wind energy projects)	Customer-side business model (recommended for installed micro-wind turbines)
Value proposition	Electricity generation fed into the grid	Customized solutions
Customer interface	Customer is not involved in electricity generation, but pays electricity per unit.	Customer is involved in energy generation. Customer shares benefits with the utility. Long term customer relationship.
Infrastructure	Small number of large scale assets and centralized generation	Numerous small scale assets and generation is close to the consumption point
Revenue Model	Revenues through feed-in of electricity Economies of scale by large projects	Revenues from direct use, feed-in and services High transaction costs

Source: Richter, 2011.

The customer-side business model involves a direct engagement of the customer in the generation of energy, while the utility can offer a broad range of services to the customer, from financing to ownership and operation of the assets (Richter, 2011).

The previously explained models described by Richter (2012), Frantzis et al. (2008) and Marko (2013) apply for wind and solar energy. The first two studies have been the main source of definition for renewable energy business models. The preference of wind energy producers for a type of the above mentioned models can be explained by various aspects: the financial aspect, respectively the amount of return it generates depending on which party is controlling a certain part of the business; the benefits gained by potential cooperation, such as resources in the case of cooperation with other utilities; the obligations of each party; legal limitations of placing equipments (such as wind energy turbines) on certain surfaces with a certain profile; the costs and profits generated depending on legal taxes and regulations in the country, where the wind energy producer is active. The latter reason can be a cause why many wind energy producers choose the utility-owned business model, although the responsibility of the whole business is higher than that the consumer-owned model, where the consumer acts as a producer.

Research methodology

The practical part of the paper focused on an analysis of sustainable business models that were used by the wind energy companies from Romania and Germany by questioning and interviewing experts in the field. While the questionnaires were prepared after a thorough documentation of the existing scientific literature and experts in the field with an academic or wind energy management background, the results of the interview were achieved by two phases of questioning through the Delphi method. According to the classical description of this method (Hugl and Laske, 2004), during the Delphi process of questioning the respondents, the experts had the possibility of analyzing the results of the first and second phases and to change their opinions for the next questioning phase. The process ended with the Delphi report which contained the answers from both stages of questions and interviews.

The main phases of the Delphi process included: (a) the selection of the inquired theme; (b) preparing the questionnaires; (c) the selection of wind energy experts; (d) the first phase of interviews with the selected experts; (e) the analysis of the results from the first phase; (f) sharing the first phase results with the experts; (g) the second phase of interviews with the experts; (h) sharing the results of the second phase with the specialists; (i) the Delphi report, which will be sent to the specialists.

In the present study participated 24 experts from wind energy companies. All specialists were active in companies from Romania and 9 of the experts were also involved in companies from Germany. The interviews and questionnaires were used in order to gain a complex overview of the current situation of business models in the wind energy field in Romania and Germany that have not been described in other reports or studies previously. Through the Delphi method we intended to ask the experts in two phases certain aspects of their implemented business models, as well as their investment intentions, in

order to see if there are some general and common business models and investment mentalities of the companies.

Most of the companies that took part in our study were companies with a maximum of 50 employees (42%), while 33% were companies had more than 1000 employees and international activity. The rest of the experts were employed in firms with 50-150 employees (13%), 150-500 employees (4%), and 500-1000 employees (8%).

The experts mentioned at least two activity profiles in their companies: investor (50%), project developer (50%), EPC contractor (46%), planner/consultant (38%), equipment supplier (29%), construction and fittings (25%), operator (38%).

The questionnaires, that were given to the experts contained two sections: the first referred to the current business models which are used by the interviewed experts, as well as general aspects of the business related to the business model development; the second referred to future trends of business models until 2020, that are estimated by the experts for the case of Romania, as well as their intentions on further investing in the field. A part of the questionnaires was sent through e-mail to the experts, while the rest was handed personally and the obtained information was completed by further data provided during the interviews.

In this study, the main research questions referred to characteristics of current business models of wind energy companies in Romania and Germany and the investment intentions of the companies until 2020.

The main assumptions the study was based on were:

H1: The main strategy of wind energy experts is to sell electricity to trading companies, as the main part of the business model. This assumption was made based on the fact that trading companies are more flexible towards price negotiation than regional network operators.

H2: The main trend in the wind energy field until 2020 is going to refer to opting out assets until 2020 in the Romanian renewable energy context. This hypothesis was based on the fact that the legal changes of reducing the green certificates support system in Romania on the 1st of July, 2013, have caused massive protests against the wind energy producers and the withdrawal of many wind energy projects from the Romanian renewable energy market. The legal issues on the Romanian renewable energy market pose a serious threat against the further development of this field.

The wind energy experts offered a complex overview of the development of business models, as well as on their strategies and intentions regarding their business in the renewable energy field.

The research was extended over a time span of 11 months between 1st May 2013 and 20th March 2014. Regarding the aspect of the wind energy experts' perception of the renewable energy environment and legal support, the specialists were interviewed again in May 2014, when they indicated a significant change in their levels of optimism in regards to the renewable energy field in Romania had before July 2013, when the green certificates support scheme was reduced.

Findings and analysis

The interviewed wind energy experts offered a complex approach on defining the characteristics of their business models, respectively: the type of wind farm (turbines) implemented by their companies, the strategies of selling electricity and green certificates in order to gain profit, the profile of wind farm owners and the strategic partnerships that have contributed to the development of their company. Regarding our second research issue on investment intentions of wind energy experts until 2020, the respondents insisted on describing their perception towards the renewable energy environment in Romania and afterwards mentioned their investment intentions for the future.

The first described specific components of the wind energy companies were the characteristics of wind turbines, namely: (a) 92% of the respondents mentioned their wind turbines are on-grid, and (b) 8% of the experts mentioned the turbines are off-grid in Romania and Germany. The off-grid turbines in Romania were another unexpected result, as experts usually avoid the off-grid solution in favour of the on-grid alternative, which would bring the advantage of green certificates per produced MW. Also, of the 24 experts, 96% mentioned they activate in onshore wind turbine parks, while 4% were active in offshore parks. The offshore wind parks are specific for Germany. There are no offshore parks in Romania, as experts claim the climate and morphology of the region is not favourable to developing offshore parks. On the other hand, Germany is a country where the offshore wind energy investments have developed significantly in the past years.

The second part of the researched inquired about the main business model strategies wind farm (turbine) operators use in order to cover their investment costs and gain profit. All experts mentioned at least two types of strategies (see Table 2), that their company uses for this purpose.

Table 2. *The common business models strategies for wind energy companies in Romania and Germany*

Strategies	No. of experts
selling electricity to trading companies	14
selling electricity to the regional grid operator	14
selling green certificates to trading companies	7
selling electricity to a third party consumer	6
using the produced electricity to meet their own needs	4
selling green certificates to an energy producer from fossil sources	3
using certificates to compensate for their own obligation to purchase green certificates	2

Source: *Author's own contribution.*

As shown in Table 2, the first option of the experts was that of selling electricity to trading companies. This result has also confirmed the first hypothesis of the present research.

Table 3. Profile of wind farm (turbine) owners according to the experts statements

Profile	No. of experts
an investor/ a group of investors/ an investment fund	16
the plant operator	13
the local/regional electricity distributor	3
the electricity consumer (only in Germany)	1

Source: Author's own research.

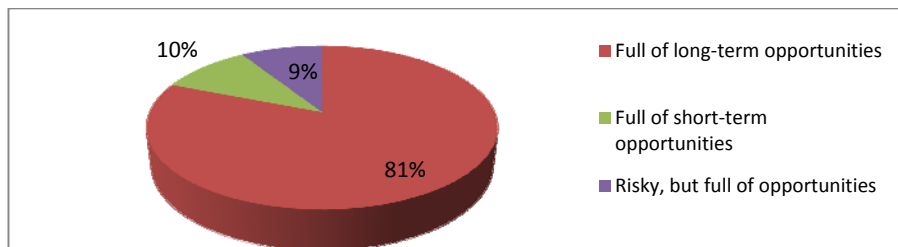
Concerning the profile of the wind farm (turbine) owner, the most important observation was that in the case of Germany, electricity consumers can also be owners, as shown in Table 3. In Romania this type of owner profile in the case of wind energy does not exist at the current moment. The experts' companies had a multiple profile and had engaged in at least two of the described activities.

Thus, the main differences between the characteristics of the business models in Romania and Germany were: (A) the offshore wind farms, that are specific for Germany, but not for Romania; (B) the wind farm turbine owner can be an electricity consumer, but this is implemented on a small-scale in Germany. The rest of the business model characteristics were common for companies active in Romania and Germany and are widely used today.

Regarding the strategic partnerships the companies were involved in, 13 of the experts active only in Romania and 7 of the experts active in Romania and Germany engaged in at least one type of strategic partnership. The strategic alliances were the most preferred form of strategic partnership in the case of 11 the respondents. Ten of the experts opted for joint ventures in the past, while 7 have bought other companies. Mergers were accomplished by 3 of the responding experts. Strategic partnerships were considered an important part of the business model of a company and one of the main strategies of developing projects together with a partner or by incorporating a partner.

The third aspect of the current research referred to the perception of the current renewable energy field, especially the aspect of the legal context that could favour or discourage the renewable energy investments in Romania and/or Germany. 11 experts referred to the aspect of renewable energy environment in Germany.

Figure 5. Perception of experts of the renewable energy environment in Germany



Source: Author's own research.

Of the 11 experts, the majority (9) considered that the renewable energy environment in Germany was full of long-term or short-term opportunities and mentioned a transparent and more stable system of support for producers in the field through the feed-in tariff system, as indicated in Figure 5. The feed-in tariff support scheme that guarantees the same price per produced MW for a long-term was defined as a more efficient support scheme than the green certificate scheme during the interviews with the specialists. The majority of the experts involved in wind energy projects from Germany affirmed they perceived the opportunities in the renewable energy field from their country in 2013, as well as in 2014. Most of these specialists mentioned they intend to pursue their investment projects for Germany in the next period and to develop their activities in other countries.

On the other hand, the Romanian environment for renewable energy in 2014 was perceived as risky and lacking opportunities by most of the respondents (13) while 3 still consider it risky, but as having opportunities. Only 8 of the experts stated that Romania has a renewable energy environment full of short-term or long-term opportunities. The experts were questioned in May 2013 - March 2014. When asked how they used to perceive the environment in 2013, the same experts in Romania claimed that before the legal regulations adopted on the 1st July 2013, they considered the wind energy environment in Romania as full of long-term opportunities. The majority of them had investment plans until at least 2020 at that moment. None of the respondents mentioned a risky and uncertain environment in Romania until the 1st of July 2013.

The differences of perceptions regarding the renewable energy environment in Romania and in Germany represented the most significant observation of the study, as it confirmed the expectations for the investment perspectives of both countries. While the Romanian green energy environment was defined as unfavourable for further development of the wind energy investments and as unpredictable, lacking transparency and security, Germany's economic and legal stability seem to contribute to the expansion of the wind energy sector for the following period.

Fifteen of the respondents affirmed they would opt out the assets related to a business activity in the Romanian renewable energy field until 2020, while only nine mentioned they would not. In Germany, the experts mentioned it is not the case. This has confirmed the second assumption of our research in the case of Romania that wind energy experts would tend to opt out their assets until 2020.

Conclusions

As a first conclusion, we confirmed the assumption that the most commonly encountered business model strategy of wind energy operators is that of selling electricity to trading companies. The inclination towards selling electricity to trading companies was motivated by the negotiation flexibility of the trading companies, as compared to other types of partners. However, an equal

percentage of investors are using the strategy of selling electricity to regional grid operators. The second hypothesis of the research was also confirmed by the experts' responses; the majority of the respondents would opt out their assets related to renewable energy in Romania until 2020.

Regarding the first research question of the main characteristics of the wind energy business models, it has been observed that in the case of wind energy companies in Germany the two main different elements from companies in Romania are: the offshore wind parks, which are specific just for German wind energy producers and the fact that the wind turbine owner may also be the consumer. The rest of the business models elements were common for wind energy companies active in both countries. Relating to previous research of Richter (2011), the utility-side business model is typically implemented in the two countries, while the customer-side business model was mentioned by only one of our experts in Germany and represents a model used on a small-scale.

Another conclusion of the study is the negative perception of the wind energy investors of Romania due to legal reasons in comparison with a favourable perception of the environment in Germany that continues to stimulate investments in the field. Although Romania has been in the wind energy industry for only six years, as compared to the 14 years of development of the field in Germany, we argue that companies in both countries use similar business model patterns based on the types of legal support they receive and internal factors. The green certificates system for renewable energy in Romania has been one of the most preferred forms of support by investors until 2013, but faces now protests from wind energy producers due to the cuts in July 2013. The cuts of the number of green certificates offered to wind energy producers in Romania has led in present time to a declining number of wind energy projects, as well as to the intentions of opting out or selling assets in the field in the short-term and middle-term future. Contrary to the green certificates situation in Romania, the feed-in tariff system of other European countries, such as Germany offers further incentives for the wind energy investments, which are further contributing to the growth of the sector.

The present research can be used by the scientific literature, as well as by wind energy and government experts in the field as an orientation tool regarding the development of wind energy business models, as well as for further improvements in the wind energy field that should revive this green energy sector in the case of Romania and maintain the favourable renewable energy environment in Germany. The present research also contributes to further knowledge advancement for the scientific literature, as the main elements of business models in the wind energy companies from the two analysed countries have only scarcely been investigated. The importance of business models is well-known, as they represent a key element to future development of companies. In the case of wind energy companies a documentation of the present characteristics of their specific business models could serve as orientation for future improvements according to changes in the renewable energy environment.

For future research, the main objective would be of observing the development of business models in the two countries until 2020 depending on legal changes of the governments and other environmental factors. Another aspect of interest would be the observation of the wind energy development in Romania and Germany and the perception of investors in the two countries that will determine new directions of the renewable energy sector.

The expectations for the Romanian wind energy market include a declining shift until 2017, as well as the lack of investment opportunities and government credibility from the perspective of potential investors. Contrary to this situation, the German wind energy field is considered an optimal environment for the development of the wind energy sector and investments.

In conclusion, sustainable business models will represent a key element for the survival and expansion of companies in the wind energy field that will represent one of the main elements of overcoming and limiting effects of future market and national policies challenges.

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