UNIVERSITY OF TWENTE.

Serving Turkish wind energy investors: customer needs and partner selection

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Master's Thesis

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Abstract

The goal of this research is to assess the customer needs of investors in wind energy power plants in Turkey and to understand how they select their business partners. Mecal Wind Farm Services commissioned this research in order to increase knowledge of the Turkish market, which is currently growing at a high rate.

Past studies are used to develop a method to assess customer needs in the setting of Turkey and focuses on the origin and importance of needs. The method used for understanding business partner selection is derived from previous studies and involves determining the relevant selection criteria, in order to subsequently measure their importance. Personal relationships are expected to be important in Turkey and receive special attention.

A multiple case study design was used to allow for thorough analysis. Three Turkish independent power producers were selected by purposive sampling, with a highly placed employee within each organization as the main data source. Data for both customer needs and business partner selection was collected by in-depth interviews, as well as a survey for the measurement of selection criteria importance.

Relating to customer needs, challenging activities and their origin were identified throughout the several stages of wind energy power plants. Especially the development stage seems to be challenging in Turkey. During development, all three cases perceived micrositing, and permitting and licensing as challenging activities. Furthermore, some relevant market related findings were made, which can impact customer needs.

Concerning partner selection, results suggest that particularly acknowledgement by other parties, quality, interpretation and advice of results, and references play an important role. Acknowledgement is especially important, because many services need to be accepted by outside parties, such as banks or wind turbine generator suppliers. Furthermore, references are important, because they are the main basis on which consultancy companies are compared. Personal relationships were found to play a smaller role than expected.

Preface

This thesis is the main outcome of my Master's project and completes my degree of Master of Science in Business Administration, track Innovation & Entrepreneurship at the University of Twente. With my background in mechanical engineering and my international orientation, the assignment at Mecal Wind Farm Services offered the perfect opportunity for me to conclude my time as a student. I have learned a lot and have done it with great joy.

I owe my gratitude to my supervisors, which have contributed to the enjoyment I have experienced. I am grateful towards my company supervisor Eric Kamphues for the freedom he offered during the assignment, and the trust that goes with it. Furthermore, I would like to thank both Joris Heuven and Raja Singaram for their enthusiastic attitude and constructive feedback throughout the project.

I am also thankful to the people close to me for their support. Last but not least, I am grateful to my colleagues at Mecal for the pleasant working environment they have provided and all their help.

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List of abbreviations

Akbank	Akbank T.A.Ş.
B2B	Business-to-business
CAGR	Compound annual growth rate
DenizBank	Denizbank A.Ş.
EBRD	European Bank for Reconstruction and Development
EIB	European Investment Bank
EMRA	Energy Market Regulatory Authority
EUR	Euro
FTE	Full-time equivalent
Garanti	Türkiye Garanti Bankası A.Ş.
GE	General Electric
GWh	Gigawatt hour (i.e., one million kilowatt hours (kWh))
HEPP	Hydroelectric energy power plant
HOQ	House of quality
HSBC	HSBC Bank A.Ş.
IFC	International Finance Corporation
IPP	Independent power producer
kWh	Kilowatt hour
MidSEFF	Mid-size Sustainable Energy Financing Facility
mil.	Million
MW	Megawatt (i.e., one million watts)
NA	Not available / Not applicable
PDD	Project design document
QFD	Quality function deployment
Renewables Law	Law on Utilization of Renewable Energy Resources for the Purpose of Generating Electrical Energy
RES	Renewable energy source
RESSİAD	Wind Power and Hydropower Plants Businessmen's Association
TSKB	Türkiye Sınai Kalkınma Bankası A.Ş.
TWEA	Turkish Wind Energy Association
TWh	Terawatt hour (i.e., one billion kilowatt hours (kWh))
USD	United States dollar
WEPP	Wind energy power plant
WFS	Wind Farm Services
WTG	Wind turbine generator

1 Introduction

The aim of this research is to (1) assess the needs of investors in wind energy power plants (WEPPs) in Turkey and (2) understand how they select their business partners. This research is performed for Mecal Wind Farm Services (WFS), which serves investors in WEPPs by providing inspections and consultancy in order to assess risk and improve yield of wind farms.

It is important for companies that serve investors in WEPPs to look into markets where the wind energy sector is gaining ground. Due to the rising of wind energy capacity in Turkey, Mecal WFS recently identified the Turkish market as one for potential foreign entry. The rise of wind energy in Turkey is reflected by the development of installed wind capacity, which was 1,329 MW at the end of 2010 versus just 50 MW at the end of 2006 (The European Wind Energy Association, 2011). In order to increase knowledge of this market, this research will focus on the customer needs and business partner selection of investors in WEPPs in Turkey. Their needs and ways of selecting business partners are addressed by making use of a multiple case study design. The data is collected from interviews and a survey.

This chapter will start with putting this research in perspective by expanding on the application of this research. Subsequently, Mecal WFS and the Turkish electricity market are discussed to provide the relevant context. The research questions are presented next. Finally, the relevance of this research and the outline of this report are set out.

1.1 Application of this research

To properly put this research in perspective, it is necessary to mention the business plan that is concurrently being developed for Mecal WFS. This business plan is aimed at entering the Turkish market, of which much is still unknown. Data collection and analysis for the business plan and this research will take place collectively. However, the scope of this research will be limited to answering the research questions, whereas the scope of the business plan is much broader, including topics such as culture, macroeconomics, costs and company establishment.

1.2 Mecal WFS

Mecal WFS is a business unit within Mecal, an independent engineering and consultancy company founded in 1989. Its headquarters are located in Enschede, the Netherlands. Mecal is globally active in wind energy, semiconductors, and vision and optronics. Its annual revenue was EUR 11.3 million in the year 2010 with a FTE count of 82. The business units that serve the wind energy sector are Mecal Wind Turbine Development and Mecal WFS.

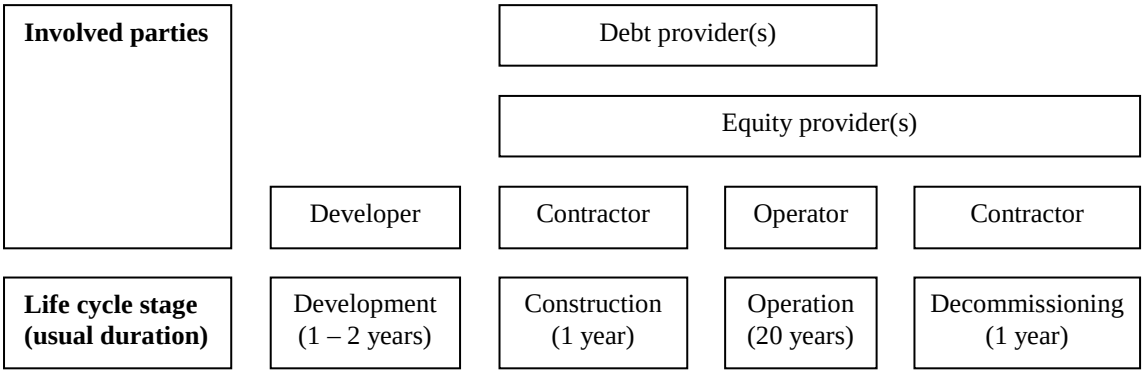
The latter was founded in 2004 to provide consultancy services to wind farm stakeholders. The business unit revenue was EUR 1.1 million in the year 2010 with a head count of ten and frequent use of subcontractors. Its mission statement is to ‘improve the value of investments in wind farms by (1) identifying and managing risks, and (2) improving yield and performance.’

1.2.1 Parties and services throughout the life cycle

The parties that have investments in WEPPs are very diverse. To get an understanding of typical WEPP investors, the life cycle of a WEPP and the involved parties at each stage are shown in Figure 1-1. It must be noted that the presented overview is a gross simplification. Ownership, financing, contracts, etc., can be set up

in a variety of ways during each of the stages, something which cannot be displayed in a single figure. The life cycle will be discussed per stage to allow for further explanation.

Figure 1-1 Life cycle and involved parties of a WEPP



The first stage is development, which involves all the preparations in getting a WEPP ready to build and is done by a developer. Once a project is deemed feasible, subsequent activities include assessing wind measurements, selecting an appropriate wind turbine generator (WTG), permitting and micrositing (i.e., determining the exact location of each WTG as to maximize yield). All of these activities are, among others, offered as a service by Mecal WFS for developers.

Once the project is ready to build (a moment in time between development and construction) a WEPP typically trades owners, in particular if development was done with the purpose of selling. As the costs become substantial once construction starts, one or several equity providers will become the owner of the project and debt providers become involved in financing the WEPP. An important service offered by Mecal WFS at this point is due diligence (i.e., assessment of the present value of the project). Debt is regularly provided by banks, which often do not possess the knowledge to properly assess such projects themselves. This can also be the case for equity providers, as large investors sometimes are not sufficiently specialized.

The second stage is construction, which is generally done by a contractor that has won the tender. Construction can be organized in several ways, ranging from separate contracts for civil work, the WTGs, the electrical equipment, etc., to turnkey projects, where everything is the responsibility of a single party. During this stage, Mecal WFS provides services like preparing tender documents, construction monitoring and hand-over inspections of the WTGs after construction.

Thereupon, the WEPP enters the operation stage and starts generating returns by producing electrical power, for which an operator is responsible. The electrical power is the only source of income that the WEPP will produce, so having a high yield is essential for making the investments economically viable. In order to keep yield as high as possible, a number of services is provided, such as performance monitoring and WTG inspections. Ensuring that the WTG is in good condition, identifying sources of lower than expected performance and advising on maintenance, thereby preventing that small flaws result in downtime are among the key activities during this stage. Also, sometimes inspections are demanded by stakeholders such as insurance companies. This can be the case when the warranty period of the manufacturer ends. Lastly, when the WEPP reaches end of life, it is either decommissioned or repowered (i.e., equipping existing WTGs with current technology).

It is important to note that a range of possibilities exist for the setup of the parties involved in a WEPP. In fact, the developer, operator and owner can very well be the same party. For example, utilities and independent power producers (IPPs) regularly take on the role of developer, operator and owner of WEPPs, making them the main stakeholder during the whole life cycle.

As can be seen, investors in WEPPs are diverse in nature. Not only do they differ in obvious matters like size and industry, but more importantly, they differ in terms of technical knowledge and the life cycle stage of the wind farm in which they are active. Because of this, the service offer of Mecal WFS is broad, but can nevertheless be classified into two groups, namely consultancy (e.g., technical due diligence, contract negotiation) and inspections (e.g., end-of-warranty inspection, extensive gearbox inspection). Both are aimed at risk assessment and yield improvement.

1.3 Turkish electricity market, legislation and regulation

The Turkish electricity sector is in a growth and liberalization period (Deloitte Energy and Resources Group, 2010). In spite of the economic turmoil, the compound annual growth rate (CAGR) of electricity consumption was approximately 4.8% between 2005 and 2009 (Turkish Electricity Transmission Corporation, 2009). Electricity consumption is forecasted to have a CAGR between 6.3% and 7.0% for 2009 until 2018, ultimately reaching between 336 and 357 TWh in 2018. Such an increase in consumption requires a similar increase in installed capacity. Figures on electricity consumption and installed capacity of recent years can be found in Table 1-1.

Table 1-1 Consumption and capacity of electricity in Turkey

Year	2006	2007	2008	2009	2010	2011
Electricity consumption (GWh)[1]	174,637	190,000	198,085	194,000*	202,730*	213,880*
Installed capacity (MW)[2]	40,564	40,836	41,817	44,761	NA	NA
Installed wind capacity (MW)[3]	50	147	458	801	1,329	NA

[1] (Turkish Electricity Transmission Corporation, 2009)
[2] (Turkish Electricity Transmission Corporation, 2010)
[3] (The European Wind Energy Association, 2011)
* Forecasted

In order to deal with this increase in consumption, the Turkish Ministry of Energy and Natural Resources set out an extensive strategy in 2009. In addition to the primary objective of ensuring the delivery of electricity, the strategy involves the creation of a sustainable electricity market, minimizing losses along with increasing efficiency, and increasing domestic investments (Ministry of Energy and Natural Resources, 2009). However, perhaps the most relevant point made is that new technologies will be encouraged, increasing diversity of resources and decreasing external dependency in energy supply. Therefore, the goal is to increase the share of renewable resources in electricity generation up to at least 30% by the year 2023. With regard to wind power the target is set at an installed wind capacity of 20,000 MW by the year 2023. Even more astonishing is the target of 10,000 MW of installed wind capacity by the year 2015, mentioned in a more recent strategic plan (Ministry of Energy and Natural Resources, 2010). Accordingly, the electricity market has been in a state of liberalization, with the Electricity Market Law of 2001 being the most important step towards a competitive and functioning electricity market. This is reflected by the decreasing public share of installed capacity, falling from 85% in 1984 to 53% in 2009 (Deloitte Energy and Resources Group, 2010). This share is

expected to decrease even further, due to the privatizations of public power plants and new private investments.

Another legislative leap occurred in 2005, when the Law on Utilization of Renewable Energy Resources for the Purpose of Generating Electrical Energy (Renewables Law) was enacted. This law was amended on 29 December 2010, with new feed-in tariffs as an incentive for investments in renewable energy sources (RES). In short, a feed-in tariff is a guaranteed purchase price for produced electricity. In the case of wind power, this is set at USD 0.073 kWh^{-1}, gradually increasing to as much as USD 0.11 kWh^{-1} if all the major components of the WTG are produced in Turkey (e.g., a USD 0.013 kWh^{-1} premium for the rotor blades), thereby stimulating domestic investments. Current market prices are between USD 0.09 and 0.095 kWh^{-1} (TSKB, 2011), making the incentives for domestic production of WTGs attractive.

The authority charged with regulating the energy market and licensing is the Energy Market Regulatory Authority (EMRA). The interest in wind power licenses is tremendous, as can be seen from the 751 applications for wind projects, totaling 78,000 MW, that were received by EMRA in just one day after making a call for renewable energy applications on 1 November 2007 (Netherlands Embassy in Ankara, 2010). EMRA is still in the process of reviewing the applications, but strives to give licenses totaling another 8,500 MW by the year 2013. As of October 2011 the licensed wind capacity is 5,971 MW, of which 1,583 MW is in operation (EMRA, 2011). Evidently, Turkish wind energy projects are becoming large in number.

1.4 Research questions

The rise of wind energy capacity in Turkey and the maturation of legislation and regulation clearly make this market an interesting one. However, little is still known about the investors in the wind energy sector. The main objective of this research is to increase knowledge by assessing the needs of investors in WEPPs and understanding how they select their business partners. Therefore, the first research question is:

1) *What are the needs of investors in wind energy power plants in Turkey?*

Addressing the other part of the main objective is the second research question:

2) *How do investors in wind energy power plants in Turkey select business partners?*

Together, the answers to these two questions should provide valuable insight with regard to serving Turkish investors in WEPPs.

1.5 Relevance

This research contributes to science by developing and employing a method for assessment of customer needs and by adding to the limited knowledge on partner selection. Methods for assessing customer needs in past studies were found to be inappropriate for the setting of this research. However, concepts from Kärkkäinen et al. (2003) and QFD literature are adopted to come to a new method for customer need assessment. This demonstrates how principles for the assessment of customer needs in literature can be used outside their original context.

This research also adds to the knowledge about business partner selection by studying the selection process. The importance of selection criteria is measured for both the consideration and choice stage. Remarkably, research focusing on partner

selection in the field of professional services is limited (Dawes, Dowling, & Patterson, 1992). Furthermore, little empirical research has been done on consideration and choice (Wuyts, Verhoef, & Prins, 2009).

Additionally, practical relevance is quite evident. The findings of this study play an important role in the development of a business plan for the Turkish market. This should help to create economic value for Mecal WFS and hopefully society as a whole.

1.6 Outline

The remainder of this report starts with a review of relevant literature in chapter 2, which offers the theoretical framework. Subsequently, chapter 3 describes the method that is used for this research. The results are presented in chapter 4. Lastly, chapter 5 provides an answer to the research questions and discusses the findings.

2 Literature

This chapter will discuss the relevant literature and will form the theoretical framework for this research. The two main topics that will be addressed are customer needs and partner selection, which relate to the first and second research question respectively.

2.1 Customer needs

Literature on how knowledge of customer needs can benefit performance is discussed to show the relevance of customer need assessment. Subsequently, two existing tools for customer need assessment are presented. Based on those tools, it is described how customer needs of WEPP investors in Turkey should be assessed.

2.1.1 Relevance

Literature linking marketing strategy to performance adopts the principle strategic fit, also referred to as strategic coalignment, stating that fit between strategy and environment has positive implications for performance (Cavusgil & Zou, 1994; Venkatraman & Prescott, 1990). Within this set of literature, international marketing strategy literature deals with the issue of standardization versus adaptation. Standardization involves using a common product, price, distribution and promotion program among markets worldwide (Jain, 1989), as a response to greater market similarity due to globalization. Adaptation, on the other hand, involves adjusting marketing strategies to each foreign market, because variations, for example in customer needs, still exist (Theodosiou & Leonidou, 2003). The choice between standardization and adaptation, which perhaps can best be seen as a continuous spectrum, has been described as a key consideration in international marketing (Cavusgil & Zou, 1994). Standardization of marketing strategy offers several benefits, such as economies of scale, consistent presentation across countries and better international coordination (Theodosiou & Leonidou, 2003). However, it has been argued that not cost reduction through standardization, but profitability and long term outcomes should be the ultimate objective, sometimes requiring adaptation to local markets (Whitelock & Pimblett, 1997). It has been found that customer purchasing differences are likely to require adaptation of marketing strategy (Katsikeas, Samiee, & Theodosiou, 2006). Furthermore, meeting the unique needs of customers can be better accomplished by adaptation of product and promotion (Cavusgil, Zou, & Naidu, 1993). This indicates that understanding customer needs can result in better decisions concerning standardization versus adaptation, thereby increasing performance.

Another set of literature that recognizes the importance of customer needs is the one dealing with market orientation. As is the case with strategic fit, market orientation has been positively related with performance (Jaworski & Kohli, 1993; Narver & Slater, 1990). Market orientation can be defined as comprising of three activities: generation of market intelligence, dissemination of the intelligence and the responsiveness to it (Jaworski & Kohli, 1993; Kohli & Jaworski, 1990). Relating to serving foreign markets, export market orientation has been found to be beneficial for export performance (Cadogan, Diamantopoulos, & Siguaw, 2002; Cadogan, Sundqvist, Salminen, & Puumalainen, 2002; Rose & Shoham, 2002). Especially generation of market intelligence and responsiveness seem to contribute (Rose & Shoham, 2002). It is within this generation of market intelligence that customer needs play an important role. This is reflected in the items that are used to measure

intelligence generation, which often involve customer needs (Cadogan, Diamantopoulos, & Mortanges, 1999; Cadogan, Sundqvist, et al., 2002). Also, understanding customer needs has been used as an item to measure customer orientation as part of market orientation (Narver & Slater, 1990). Evidently, also export marketing orientation literature stresses the importance of customer needs.

2.1.2 Customer need assessment

The relevance of customer needs has resulted in several tools and studies relating to the assessment of customer needs, but only very few concern customer need assessment in a business-to-business (B2B) environment (Kärkkäinen, Piippo, Puumalainen, & Tuominen, 2001). This scarcity of literature dealing with the assessment of customer needs in a proper setting makes it difficult to apply existing literature to this research. Nevertheless, two tools have been found that can aid in customer need assessment for the setting at hand. The first is a tool for manufacturers for the development of products. The second tool is developed for industrial markets. These tools will help in the development of a new method for assessing customer needs in this research.

2.1.2.1 A tool for incorporating customer needs for manufacturers

Literature on quality function deployment (QFD), a customer-driven quality management system (Chan, Kao, & Wu, 1999), gives some insight about how needs can be assessed and how they can be used in the development of products. The belief that products should reflect customer needs is central in QFD. It translates customer needs, also referred to as the voice of the customer, into production requirements in four phases.

The first phase is called the house of quality (HOQ), which is a tool for translating customer needs (e.g., no road noise in car) into engineering characteristics (e.g., noise reduction of insulation) (Hauser & Clausing, 1988). This is done in several steps, of which the first two are relevant to this research. Step one is determining what the needs of customers are and has been described as a qualitative task that involves asking customers to formulate, in their own words, the benefits to be fulfilled by the product or service (Griffin & Hauser, 1993). The second step is determining the relative importance that customers of these needs. This way, a company can focus on important customer needs and disregard unimportant customer needs to make best use of its resources (Chan, et al., 1999). Furthermore, if a tradeoff between customer needs has to be made (e.g., top speed versus fuel consumption), the relative importance of needs can help in making better decisions (Hauser & Clausing, 1988).

The subsequent steps in the HOQ and the latter phases in QFD are more manufacturing related, focusing on the characteristics of physical parts of a product, the needed processes, production and planning. Nevertheless, the belief that customer needs should play a central role, they should be assessed in a qualitative way and that their relative importance should be determined, provides guidance for this research.

2.1.2.2 A tool for customer need assessment in industrial markets

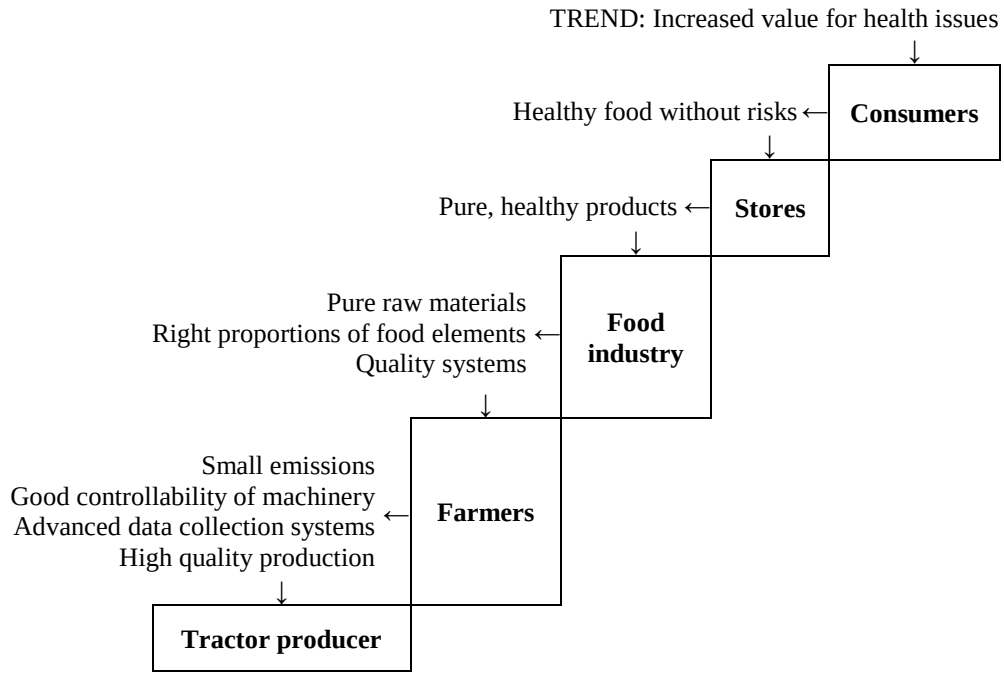
Literature on QFD does not fully elaborate on how customer needs should be identified. Griffin & Hauser (1993) state that a typical study involves interviewing customers until no new needs are obtained. But this is likely to bring to light current needs, not future needs. Furthermore, needs can be affected by environmental factors, such as regulation and technology (Kohli & Jaworski, 1990). The identification of customer needs therefore does not stop at obtaining customer opinions, but involves

taking into account external forces as well. This view is adopted by Kärkkäinen et al. (2003), who developed a tool for systematic assessment of customer needs. The tool is developed for, and in cooperation with, Finnish industrial companies.

Customer needs are seen as discrepancies between the existing and the desired situation that may or may not be recognized (Holt, Geschka, & Peterlongo, 1984). These needs can currently exist or emerge in the future. However, customers cannot always clearly state their needs, either because they are not willing or they are not able (Kärkkäinen, Elfvengren, Tuominen, & Piippo, 2003). Also, insights into needs provided by customers are constrained by their real-world experience, and therefore not likely to generate novel concepts (von Hippel, 1988). Thus, asking needs to the customer in a direct manner is not sufficient. Kärkkäinen et al. (2003) attempt to overcome this problem by clarifying the needs of organizations in the business chain (i.e., companies or other parties of a customer chain and the related important stakeholders) that are likely to affect product requirements. To better understand the needs of direct customers, a company should have knowledge about the needs of the stakeholders of its direct customers.

Their tool involves the use of a diagonal matrix, in which the studied company, its customers, suppliers and other important parties and stakeholders are placed on the diagonal. The closest customers are placed nearest to the studied company, with importance of parties decreasing at the further end of the diagonal. Figure 2-1 shows an adapted example of the tool. It shows how the trend of increased value for health issues can ultimately lead to farmers expressing a need for advanced data collection systems towards tractor producers. Some of the needs of farmers expressed towards tractor producers originate from further down the business chain. The analysis of the needs of parties in the business chain until it impacts the investigated party is referred to as tracing (Kärkkäinen, et al., 2003). Investigating from which party a need originates is referred to as reverse-tracing.

Figure 2-1 An example of the tool in the tractor producer's business. Adapted from "A tool for systematic assessment of customer needs in industrial markets", by H. Kärkkäinen, K. Elfvengren and M. Tuominen, 2003, *Int. J. Technology Management, 12,* p. 597.



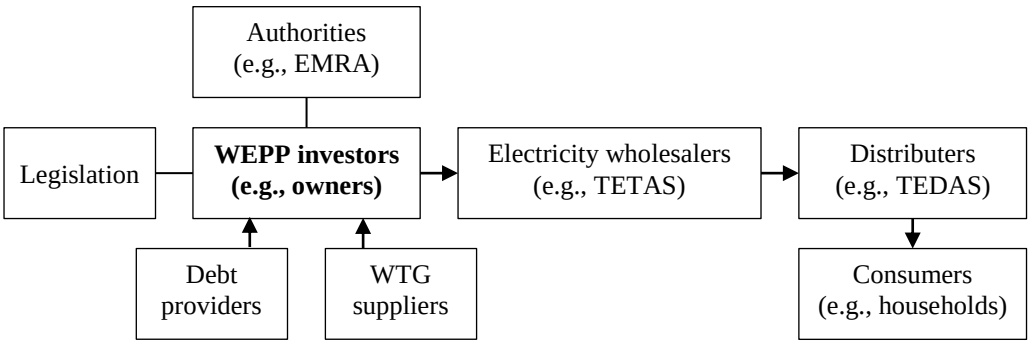
2.1.3 Customer need assessment of WEPP investors in Turkey

Two tools for customer need assessment have been discussed, but both have their set of limitations when it comes to the case at hand. Both QFD and the tool of Kärkkäinen et al. (2003) are designed for the assessment of customer needs in specific settings. QFD is mainly focused on translating needs of consumers into product characteristics (Hauser & Clausing, 1988). Many aspects of the tool concern the manufacturing of products, thereby not relating to the needs that have to be assessed in this research. The tool of Kärkkäinen et al. (2003) seems appropriate for long business chains, as illustrated by the example of Figure 2-1, and is applicable in homogenous markets with similar customer needs (Kärkkäinen, et al., 2003). Therefore, neither seems directly suitable for this research.

This calls for the development of a new method. Despite the mentioned shortcomings of the two tools for this research setting, some of their fundamentals can be adopted. Relating to QFD, one of those basics is determining the importance of a need once it is identified. Knowing the importance of customer needs can prove useful in choosing on which needs to focus (Chan, et al., 1999; Hauser & Clausing, 1988). This is also true for this setting, so the notion that knowing the importance of customer needs helps to better allocate resources and effort is adopted.

Similarly, some parts of the tool of Kärkkäinen et al. (2003) can be applied for the setting of Turkey. Figure 2-2 shows an example of parties and factors that can affect customer needs of a Turkish WEPP owner. The tool argues that the needs of the WEPP owner can be found by identifying the needs of customers further down the business chain (e.g., electricity wholesalers, distributers, consumers), referred to as tracing. However, as electricity is a commodity, an emphasis on such parties might be somewhat inappropriate. Far more likely to affect needs are suppliers (e.g., WTG suppliers), important stakeholders (e.g., authorities), or external factors (e.g., legislation). The tool of Kärkkäinen et al. (2003) acknowledges the effect suppliers, stakeholders and external factors (i.e., factors affecting parties marked on the diagonal, but not originating directly from any of them) can have (Kärkkäinen, et al., 2003). This research, then, merely shifts the focus of the tool from customers further down the business chain to other parties.

Figure 2-2 An example of parties and factors affecting customer needs in Turkey



This research further deviates from the original tool by applying *reverse-tracing* instead of *tracing*. As said, deriving the needs of the complete business chain to the needs of WEPP investors is not suitable for this setting. Also, there might be unknown parties or factors that affect the needs of WEPP investors, limiting the possibilities for tracing. Therefore, reverse-tracing is applied, which involves determining the origin of identified needs (e.g., need of the owner for due diligence originates from the bank because it is required for receiving finance). This can help to

create better insight and possibly to identify needs that have not yet been recognized by the WEPP investors (Kärkkäinen, et al., 2003).

Lastly, knowing when needs occur also gives insight in a more practical sense. Determining the stage in which a need occurs generally happens naturally, but paying attention to it can help identify which stages are most challenging for WEPP investors. Therefore, this research should not only identify the needs of WEPP investors, but determine (1) when these needs occur, (2) what their origin is and (3) how important they are, thereby providing better understanding.

2.2 Partner selection

In addition to knowledge about customer needs, another important challenge is gaining insight in partner selection. Understanding how selection practices in a B2B environment take place can benefit supplier firms (Wuyts, et al., 2009). Suppliers that know about choice criteria should be more successful in coping with competition, due to better understanding of selection processes (Dawes, et al., 1992). As business culture differs between countries, selection practices in Turkey may deviate from those of current markets.

In particular, there are indications that personal relations can play an extensive role in Turkey (Turkey Institute, personal communication, 2011, March 9; ING Bank, 2009). The importance of personal relationships in other cultures is expressed by Granovetter (1985) in an example about Japan: "The after-hour sessions in the bars and nightclubs are where the vital personal contacts are established and nurtured slowly. […] The resulting tight-knit nature of Japanese business society has long been a source of frustration to foreign companies trying to sell in Japan." Special attention is given to personal relationships in this research, because such findings suggest that they can play an important role.

In order to get a better understanding of the way business partners are selected, studies relating to partner selection criteria are examined. Thereafter, embeddedness theory is discussed to properly put personal relationships in perspective. Lastly, the distinction between consideration and choice is explained.

2.2.1 Partner selection criteria

There is a great deal of literature on factors that influence partner selection, including external market effects such as the pace of technological change (Heide & Weiss, 1995), or position in the supply chain (Choi & Hartley, 1996). However, to limit the scope, the focus will be on criteria relating to the chance of the supplying party to be chosen (i.e., criteria concerning the supplier that influence the selection decisions of the buyer). Such criteria play a major role in the decision-making process of the buyer and understanding these criteria can greatly benefit the supplier (Dawes, et al., 1992; Wuyts, et al., 2009). Furthermore, only studies performed in a B2B environment are reviewed, excluding research involving consumer behavior (Roberts & Lattin, 1991). To further limit the scope, the studied criteria must include personal relationships, as this factor is expected to be relevant in Turkey. Thus, only literature on selection criteria (1) relating to the chances of the supplying party, (2) in a B2B environment, and (3) including personal relationships, will be examined. This way, the literature should provide insight into the importance of personal relations relative to other criteria in a setting similar to the one at hand. As a consequence, only a limited amount of literature was found. Table 2-1 summarizes the findings of the found literature.

Table 2-1 Literature on partner selection criteria

Article	Setting	Findings
Dawes et al. (1992)	Australian consulting firms	Reputation in a specific functional area and general reputation are the two most important choice criteria (out of 17 criteria).
Hirakubo & Kublin (1998)	Japanese electronic component industry	Price is the most important supplier selection criteria (out of 14 criteria). Product characteristics are more important than the relationship with the supplier.
Wathne et al. (2001)	Corporate customers of commercial banks from one region	Price is the most important factor influencing the decision to switch to another supplier (out of four criteria).
Wuyts et al. (2009)	Dutch market research agencies	Good personal relationships and interpretation and advice have the most positive effect on supplier consideration (out of six criteria). Good personal relationships and expert image have the most positive effect on supplier choice.

Dawes et al. (1992) focus on the choice stage and study a set of 17 choice criteria for management consultancy services in Austria. They found that the consultant's reputation in a specific functional area and its general reputation are the most important criteria. However, the third most important criterion was found to be that the buyer knows the specific consultant, indicating that personal contacts and building and maintaining personal networks is important (Dawes, et al., 1992). Furthermore, experience with the consultant and prior use of the consultant take place four and six respectively, further indicating the importance of personal relationships.

These findings are inconsistent with a study performed among Japanese electronic component purchasers (Hirakubo & Kublin, 1998). It was found that, for both customized and standardized components, the three bid characteristics (quality, price and delivery) were the most important, with price being the main criterion. All of the 11 supplier characteristics were ranked lower on relative importance. Criteria that relate to relations, namely well-knownness, current relationship and equity-relationship, were ranked especially low. Surprisingly, this seems to contradict the previously mentioned notion of Granovetter (1985) that personal contacts are vital in Japanese business.

In another study among commercial banks and their corporate customers, the effects of personal relationships on switching behavior were examined (Wathne, Biong, & Heide, 2001). Again, price was found to be the most important criterion, in this case for switching suppliers. A remarkable finding was that personal relationships were thought to be second most important by suppliers (i.e., the commercial banks), but were regarded as least important by the buyers (i.e., the corporate clients). This discrepancy in perception indicates that these suppliers have a limited understanding of the considerations their customers make.

Discrepancy also exists between the general findings of Wathne et al. (2001) and those of a study performed about the selection of market research agencies in the Netherlands (Wuyts, et al., 2009). They found enrichment of the provided service through interpretation and advice to be the most important criterion during the consideration stage, with personal relationships being almost equally important. During the choice stage however, personal relationships become the most important selection criterion, followed by expert image. A notable finding is the difference in importance of price between the two stages. A higher price only has a minor negative impact during the consideration stage, but becomes much more important when a final choice has to be made.

Overall, the findings in literature concerning the importance of personal relationships and other criteria are divided. Because these studies differ in many ways, inconsistency between the findings can not only be explained by differences in the setting (e.g., region or industry), but also by the employed method, the (amount of) criteria that were analyzed, how these criteria were operationalized, etc. Nevertheless, the setting might play an important role. A possible explanation for the importance of price found by Hirakubo & Kublin (1998) and Wathne et al. (2001) is that electronic components and services provided by banks can be compared in a rather objective way before they are provided. This is not the case for consulting services and market research, which is a possible reason for the relative importance of criteria such as personal relationships and reputation found by Dawes et al. (1992) and Wuyts et al. (2009).

2.2.2 Embeddedness and personal relationships

Embeddedness theory helps to put such differences in perspective. The partner selection process has been approached in several ways in literature, ranging from economic to sociological (Wuyts, et al., 2009). Market theory dictates that relationships do not play a role, as behavior is mainly selfish and profit-seeking. In a functioning market, partners are therefore selected on basis of price and quality, as this is all the information needed to make rational decisions (Uzzi, 1996). This view is in accordance with classical economics and downplays the role of personal relationships, which can only cause inefficiency. This conception is referred to as undersocialized (Granovetter, 1985). The sociological conception is at the other end of this spectrum, stating that actions and behavior are dictated by social context (Wuyts, et al., 2009). Granovetter (1985) refers to this as oversocialized.

Embeddedness theory resulted from the lack of both approaches to properly explain economic transactions (Wuyts, et al., 2009). It suggests that economic actions take place within the context of personal relations, which have been operationalized as the degree to which close and personal relationships exist between boundary personnel in transacting organizations (Wathne, et al., 2001). Therefore, actions are always both economic and social. This view is adopted in this research, because on the one hand investors are expected to act in their own best interest, but on the other hand Turkish business culture is expected to involve social behavior.

2.2.3 Consideration and choice

Wuyts et al. (2009) make an explicit distinction between consideration and choice in studying the impact of partner selection criteria. They define consideration as consisting of screening and simplifying the decision environment for a given service. Choice takes place later and involves selecting the optimal partner from the consideration set. This distinction becomes especially relevant when considering selection criteria. For example, a strong brand name might prove to be a powerful criterion to become part of consideration sets (Wuyts, et al., 2009). However, once a consideration set has been established, the importance of criteria might shift during the choice stage, at which point a strong brand name does not significantly improve chances of being selected, but criteria like fast delivery can become more influential.

2.2.4 Partner selection of WEPP investors in Turkey

Studies on partner selection in B2B environments mainly focus on partner selection criteria, as they are at the core of buying decisions in industrial settings (Dawes, et al., 1992). More precisely, they focus on the relative importance of

selection criteria in order to increase understanding. This helps suppliers in successfully marketing their services (Dawes, et al., 1992; Wuyts, et al., 2009). However, both the measured criteria themselves as well as the findings on their importance differ greatly among studies. This calls for the measurement of importance of selection criteria in Turkey.

Furthermore, the selection process is assumed to be neither totally driven by profit-seeking behavior (i.e., solely based on price and quality (Uzzi, 1996)), nor totally dictated by social behavior (Granovetter, 1985). Even if price and quality would be the only factors that influence the selection process, determining quality beforehand can be problematic for many services (Wuyts, et al., 2009), making the involvement of other factors likely. Therefore, it is believed that the relevant criteria extend beyond price and quality, involving social context. To further increase the understanding of selection criteria, a distinction between the consideration stage and choice stage should be made, as the importance of criteria can differ between those stages (Wuyts, et al., 2009).

3 Method

The previous chapter discussed the literature relevant for answering the research questions. This chapter will describe the method that will be used for the assessment of customer needs of investors in Turkey and the way they select their business partners. Firstly, the preliminary investigation of investors is introduced. Then, the study design is discussed. The chapter will then go more in-depth on the way data is collected and will conclude with describing how the data will be analyzed.

3.1 Preliminary investigation of investors

Both research questions involve investors in WEPPs in Turkey, making it impossible to provide an answer to these questions without knowing who they are. Therefore, before discussing the method, preliminary research has to offer an answer to the following question:

Who are the investors in wind energy power plants in Turkey?

Answering this question is a prerequisite for addressing the research questions. Appendix I describes the preliminary investigation of investors in WEPPs in Turkey and provides an answer to who they are.

3.2 Study design

Knowing who the WEPP investors are, a multiple case study design is used for this research, as it is suitable for exploratory studies (Yin, 2003, p. 23). The main reason for this approach is that it allows for a thorough analysis that can incorporate details that are often overlooked by other methods (Kumar, 2005, p. 113). Furthermore, the use of multiple cases should substantially expand the generalizability of the findings (Bickman & Rog, 2009, p. 260).

3.2.1 Target population

In Appendix I three groups of investors in WEPPs are investigated: owners, developers and operators, and banks. However, the findings indicate that the role of most WEPP owners includes development and operation, which reduces the groups of investors to owners and banks. Because it is expected that owners that also perform development and operation represent a larger market than banks, the focus will be on this group. More specifically, the target population will be Turkish IPPs that own, develop and operate WEPPs.

3.2.2 Case selection

All of the IPPs located in Istanbul with a wind capacity in operation over 50 MW were contacted by phone to ask for their participation. A list of contacts within Turkish companies involved in renewable energy provided by the Consulate General of the Netherlands in Istanbul helped with getting into contact with employees that were suitable for this research. Ultimately, three cases were selected by purposive sampling (i.e., picking a small number of cases that will yield the most information (Bickman & Rog, 2009, p. 292)). These cases were selected because of their willingness to participate and because of the functions of the participating employees: in two cases a deputy general manager and in one case an investment coordinator. Such employees should be very appropriate for this research, as their functions are likely to require heavy involvement in decision making processes. This should make

them able to provide valuable insights relating to their company's needs and way of selecting business partners.

Furthermore, the three cases differ in size, ranging from very small to medium IPPs as described in Table I-2. Also, in terms of field of activity, they all have different power portfolios (i.e., solely wind energy, solely renewable energy or a variety of energy sources). Lastly, there is a significant difference in their wind capacity as well. These different contextual conditions should result in increased generalizability of the results (Bickman & Rog, 2009, p. 260).

Selection of the cases was restricted by three main factors. Firstly, as a result of the agreed travel arrangements, the selected cases had to be in one area. As a majority of the IPPs has an office in Istanbul, Turkey, IPPs in other areas were disregarded. Secondly, due to the way data will be collected, an employee within the concerning organization able of providing useful insights had to be willing to participate in this research. Lastly, due to the timeframe of the stay in Istanbul, the employee also had to be available during this period.

3.3 Data collection

Data about the cases is collected by two means: an in-depth interview with the employee of the case organizations and a survey among the cases. In-depth interviewing should be a suitable method, as qualitative data collection techniques are especially appropriate when there is lack of familiarity with the investigated culture or country and when there is a focus on understanding underlying motivations relating to particular services (Douglas & Craig, 1986, pp. 153-154). More importantly, however, is that in-depth interviews provide the flexibility to directly raise and adapt questions depending on what is said (Kumar, 2005, p. 123). This should be a great advantage, because knowledge about the cases, and therefore the ability to pose relevant questions, is expected to increase significantly during the interviews. After all interviews are completed, the survey is used to collect additional data on business partner selection criteria that has the advantage of being easily comparable and less susceptible to researcher bias (Douglas & Craig, 1986, p. 226).

The exact way the interview is conducted will now be discussed more in-depth for both research topics. Furthermore, the method used for the survey is set out. Lastly, an overview of the complete data collection process is presented.

3.3.1 Customer needs

Despite the lack of an existing suitable method, literature can aid in how needs should be assessed. Identifying customer needs has been described as mainly a qualitative research task in QFD literature. Customers are generally interviewed for an hour, where the interviewer continuously probes to get a more complete view of the needs (Griffin & Hauser, 1993). Furthermore, during the application of the tool of Kärkkäinen et al. (2003), participants of a group between five and ten persons are asked to list the needs of the involved parties. However, one-on-one interviews seem to yield more customer needs than focus groups, possibly because it offers a better forum to express larger variety of needs (Silver & Thompson, 1991). Therefore, the in-depth interview seems a very appropriate method for the assessment of customer needs in this setting.

The interview is structured in such a manner that needs are discussed in two different ways. The interviewee is first asked to go through the typical activities of a finished WEPP project. The purpose is twofold: the role and method of working of the organization is determined, which is necessary to conduct the rest of the interview

effectively, and secondly customer needs can come to light. Knowing which activities are typically performed during each stage helps in determining the exact role of the IPP. After the WEPP project has been discussed, the second way that customer needs are assessed is by asking the interviewee what the most challenging activities are during WEPP projects. Probing is applied to gain further understanding of those challenges, with a focus on determining the origin. Attempting to discover the origin of challenges can be seen as reverse-tracing and should increase understanding of customer needs (Kärkkäinen, et al., 2003).

3.3.2 Partner selection

Turkish IPPs have many types of suppliers, for which the criteria might not be the same. Criteria for consultancy companies will be the subject of investigation, because such companies play a role during the complete lifecycle of WEPPs. An important characteristic of consultancy companies is that it is not always straightforward to evaluate them and the value of their services in advance (Wuyts, et al., 2009). To evaluate partner selection criteria, it must first be determined which ones play a role. Both Wuyts et al. (2009) and Dawes et al. (1992) report making use of qualitative methods, namely in-depth interviews and group discussions, to determine the relevant selection criteria. Therefore, it can be considered appropriate to identify the relevant selection criteria during the in-depth interview.

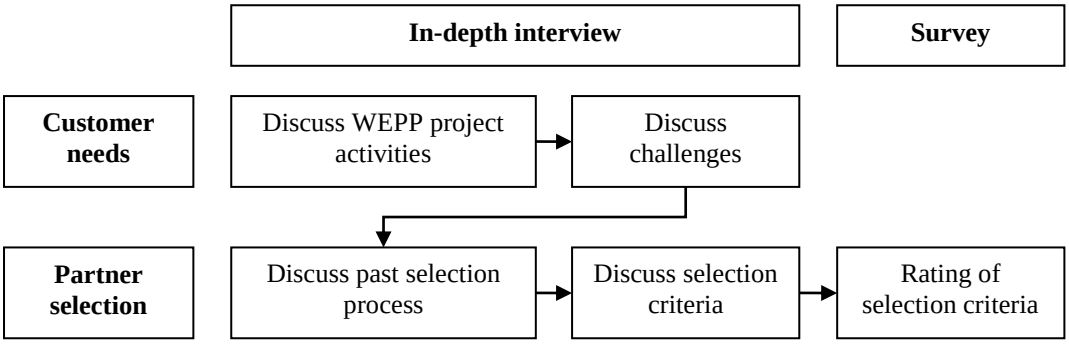
Similar to the assessment of customer needs, selection criteria are determined during the interview in two different ways. The interviewee is first asked to go through the process of selecting a particular consultancy company it has used in the past. This should either confirm or disconfirm the prominent role of selection criteria during the partner selection process and it should be possible to derive the most important criteria from the discussion. Secondly, the interviewee is asked directly which criteria are used to select consultancy companies.

Subsequently, the criteria identified during the interview and literature will be used to come to a list of relevant criteria. This is in accordance with the two-stage research design used by Wuyts et al. (2009) and Dawes et al. (1992). The importance of the criteria is measured by a survey, as is common for similar settings (Dawes, et al., 1992; Hirakubo & Kublin, 1998; Wuyts, et al., 2009). The interviewed employees are asked to rate these criteria ranging from 1 (not important) to 7 (very important), a scale adopted from Dawes et al. (1992), via a web survey. Furthermore, the distinction made by Wuyts et al. (2009) between the consideration stage and choice stage is also adopted in this research. Therefore, the cases are asked to rate the criteria for two points in time: the consideration stage and the choice stage. Appendix IV describes the survey in detail.

3.3.3 Complete process

The structure of the complete data collection process is graphically presented in Figure 3-1. The in-depth interview covers both research questions by discussing both topics in two ways. In order to start the interview properly, the topics start by discussing past activities, before discussing them in a more sensitive or direct manner (Carson, Gilmore, Perry, & Gronhaug, 2001, p. 76). Additionally, after all interviews are conducted and the relevant criteria have been determined, the survey is used to collect data on the importance of the selection criteria.

Figure 3-1 Data collection process



3.4 Data analysis

As can be seen from Figure 3-1, data is collected by different means. Relating to the interview, notes are taken when conducting the interviews and directly afterwards these are worked out on paper. Subsequently, the worked out interviews are coded by using qualitative data analysis software (i.e., ATLAS.ti v.6.2) in order to enable easy recognition of challenges and criteria, as well as other findings that are deemed relevant. The identified criteria will serve as input for the list of selection criteria that are measured in the survey. The data analysis will be discussed for customer needs and partner selection in more detail.

3.4.1 Customer needs

The discussion of the activities performed during a WEPP project is mainly to determine the role that the cases fulfilled during the several stages of the WEPP. This information is necessary for effectively discussing the challenges. For example, if a case chose to make use of several subcontractors during construction, some of the later questions might relate to the logistic challenges of having multiple parties work on constructing the WEPP. Therefore, a great deal of the assessment of this data takes place during the interview, as it serves for effectively conducting the remainder of the interview. However, information on the activities the cases perform is of course important for interpreting the findings as well, which is why this will be set out in the results first.

The analysis of the discussion of the challenges will focus on identifying the challenges and understanding their origin. An overview of the challenges will be presented in the form of a table, stating the challenges for each stage, their origin and which cases experienced the challenge. The number of cases experiencing a challenge is a measure for its importance. However, as a proper understanding of the origin is essential in estimating the importance (Kärkkäinen, et al., 2003), a large part of the interview itself is an important part of the results. Therefore, in addition to the table that mainly serves as an overview, findings relating to the challenges are presented textually.

3.4.2 Partner selection

During the interview, the process of selecting a consultancy company is discussed first. It is difficult to determine a way this data can be presented in a structured manner without putting restrictions on the possible answers. As there is little knowledge about the process of selecting consultancy companies, this is not a valid option. Consequently, the interviewees are allowed to freely talk about their selection process, which is why these findings are presented textually.

However, analysis of the selection criteria will take place differently. Criteria are identified by analysis of the discussions on both the selection process as the selection criteria. These are listed in a table, stating which selection criteria were identified for each of the cases. This, together with literature, will be the basis for the list of criteria that will be used in the survey. Finally, the ratings given to the criteria in the survey are presented in a table for each case and for both the consideration and the choice stage.

4 Results

Findings from the three cases, referred to as cases A, B and C, will now be presented. The results are presented per subject instead of per case. The results are multifaceted, as they cover two research questions and data was collected by multiple methods. By presenting results per subject, the findings from the different cases can be compared in a simple manner and it is clear to which research question the findings relate.

4.1 Customer needs

Before going over the results that relate to the challenges faced by the cases, it is necessary to describe the findings relating to the role the cases take on during WEPP projects. Throughout the WEPP project case A makes no use of consultancy companies. The only activity that forms an exception to this rule is micrositing. Case B and C, on the other hand, do make use of consultancy companies, especially during development. According to case A, the reason for this is the level of ownership involvement. Keeping all aspects of a project within the company is something that has characterized Turkish family companies in the past, and this remains the same in new markets they enter, such as the one of energy. This is because generally the owner is still heavily involved in the day-to-day business and prefers not to outsource. It is common for Turkish family companies to work this way. Other Turkish and foreign companies do not operate like this and are therefore more likely to make use of consultants.

4.1.1 Challenges

The identified challenges are limited for case A, as they had successfully developed WEPPs without the use of consultancy companies and therefore the focus of the interview was on other subjects. Table 4-1 shows the list of challenges that came to light for each case during the interviews. They are presented in the order as they would appear during a regular WEPP project.

Table 4-1 List of challenges

Challenge	Origin	Case A	Case B	Case C
Development				
Accurate wind data	Necessary for micrositing		x	x
Micrositing	Necessary to make project bankable	x	x	x
Permitting and licensing	EMRA and local authorities	x	x	x
Cost effective engineering	Site conditions		x	
Financing				
Receiving finance	Market conditions		x	
Construction				
Transportation	Site conditions		x	
Operation				
Dispute with WTG supplier	Dependency on WTG supplier		x	x

The first challenge that was identified is the collection of accurate wind data. For case B erection of the mast, necessary for performing wind measurements, was somewhat problematic due to difficult soil conditions. However, the real challenge lies in the accuracy of the measurements. Case B had high tolerances for their wind data in a previous project, which had negative consequences for micrositing. This is why they demanded no tolerances in the wind measurements of a current project, for which measurements have been taken for a period of two years. The necessity of

accurate wind data for micrositing is also reason for case C to collect wind measurements for a period of at least one year.

Secondly, micrositing is perceived as a major challenge and as a crucial step in development by all three cases. In fact, micrositing was the only activity to be performed by a consultancy company for case A. Independent and proper micrositing is necessary to make the project bankable. Financing cannot take place without it, as banks are not willing to provide a loan when not convinced of the micrositing. This then, is a major challenge during development.

Furthermore, permitting and licensing is considered a major challenge by all three cases. A distinction can be made between acquiring a license from the EMRA and dealing with licenses and permits from local authorities. Receiving a license from the EMRA is problematic, because of the problems they are faced with due to immense amount of applications that need to be processed. However, a license from the EMRA only provides in a grid connection and the right to sell electricity. So, additionally, licenses and permits are needed from local authorities before construction can start. This is challenging, because local legislation differs greatly between areas (e.g., different provinces, urban versus rural areas) and also because it can change rapidly over time. Case A stated that there is a lot of bureaucracy in general in Turkey.

The last identified challenge during development is the cost effective engineering of the civil and electrical works. As this was primarily a site specific issue, only case B indicated this to be challenging. Site conditions, especially relating to the soil, required well engineered civil works. As put by the interviewee: “Civil construction is not sophisticated; it is the engineering that is important.”

Relating to the next stage, financing, the findings are diverse. Case B stated that financing is not easy, because of the difficult market conditions due to the financial crisis. According to case B, interest rates are currently 26% higher than one year ago. However, renewable energy seems to be a priority for banks, which makes financing a little easier. This conflicts with the opinion of case A, which described financing conditions as good: there are a lot of banks, Turkish and foreign, that provide finance. Case C noted that, in addition to proper development (i.e., reliable yield estimations, having all required permits and licenses, etc.), the credibility of the owning party is a major factor in receiving finance. This is because financing is almost exclusively debt based in Turkey.

The construction stage, following financing, seems to be the least challenging. All three cases reported that in general construction is not challenging. However, case B indicated that some issues with transportation arose, again as a result of site conditions.

Lastly, in the operational stage, two cases had a dispute with the WTG supplier. In addition to a standard contract, all three cases have an availability guarantee (i.e., guarantee that the WTG is able to produce power, typically about 97% of the time) and a maintenance agreement with the WTG supplier. This can result in disputes, as happened to case B. They had a blade-related issue, for which they blamed the WTG supplier. However, the supplier believed the problem was caused by the way the WTGs were operated. In order to solve such a dispute, an independent party is needed to investigate the issue and contracts, so a verdict can be reached as to which party is responsible for resolving the issue. Case C experienced a similar dispute, in which they suspected that the power curve (i.e., power output of the WTG as a function of the wind velocity) did not meet what was agreed on in the contract.

Again, an independent party is then needed to perform measurements and reach a verdict.

4.1.2 Additional findings

Some additional results were found that impact the needs Turkish IPPs. Firstly, cases B and C also make use of consultancy companies for activities that are not necessarily perceived as challenging. This is mainly the case during development and includes activities such as determining suitable sites, wind resource assessment and selection of the WTG model. Case B noted that, in general, development is not yet well understood in Turkey. During construction, case B reported to make use of a consultancy company for construction supervision. Another notable finding is the unawareness of possibilities for yield improvement during discussing the operational stage with all three cases. However, when the possibility for yield improvement was mentioned, especially case B and C did show interest.

Secondly, three important market-related findings should be reported, as also they might have impact on future needs of WEPP investors. Both case B and C stated that there are a lot of companies that can be called license traders. These companies are not interested in developing WEPPs, but acquire licenses from the EMRA with the purpose of selling. According to case C, a gross majority of the 78,000 MW of applications received by the EMRA on 1 November, 2007 was done by such companies, which often did not even perform wind measurements before applying.

Another market-related finding concerns the new incentives of 29 December, 2010 for domestic production of the WTGs. As the provided feed-in tariff for electricity is higher than spot market prices when the WTG is completely produced in Turkey, local content should be stimulated. Indeed, case A reported that it was looking into possibilities to produce its future WTGs domestically and that WTG suppliers, such as Enercon and GE, are reacting to the new legislation by setting up factories in Turkey. However, case B stated that it is not planning on making use of the new incentives, because the legislation is still too ill-defined. The new legislation would require that every aspect of the WTG is produced in Turkey, which sometimes is not possible. For example, steel of the right thickness to reinforce the concrete is not available in Turkey and has to be imported from Germany, which means the incentives cannot be claimed anymore.

Finally, it should be noted that case A, which does not make use of consultancy companies during their WEPP projects, expects that the amount of capacity that will be developed the coming years is greater than the current developers and consultancy companies in Turkey can handle. Due to the new licenses that are currently being released, even IPPs that are developing in-house might be forced to outsource some of their activities, because the amount of work is too great.

The way these additional findings can impact the needs of Turkish IPPs is explained in more detail in the discussion section of the following chapter.

4.2 Partner selection

The business partner selection findings can be divided in two parts, namely those that relate to the selection process in a general sense and those that specifically concern selection criteria. The presentation of the findings follows this separation by firstly dealing with those from the consultancy company selection discussion and secondly with those of the selection criteria discussion and the survey (see Figure 3-1). The process is discussed per case.

4.2.1 Process

Case A selected the consultancy company it used for micrositing primarily because of its references. The company had performed about 60% of all the micrositing done in Turkey. Furthermore, it is an international company with a Turkish local representative, which makes it easier to work with them. According to case A, having a local representative also makes it possible to perform faster. The reason case A did not choose another international consultancy company was that they demanded a list of required data before they could start working. However, working like this is not appropriate in Turkey. Adjusting to what is available is essential: "If the scale of the provided map is too high for micrositing, bad luck, you should start to work anyway."

The considerations of case B were found to be of a different nature. In their role as investor, they are not independent as they use borrowed money. Therefore, it is very important that the consultancy companies are accepted by banks. In the case of micrositing, the bank had a list of accepted companies from which to choose. Because of this, case B ended up using a consultancy company that did not have their preference. After acceptance by banks, references are considered the most important. Turkish references are not favored over international ones, but can be a deciding factor when two parties are equally suitable. Also, case B indicated that a local presence can help to solve minor issues that can be very expensive and time consuming to solve from abroad. Knowledge about local governments and its procedures are sometimes essential in solving problems. Furthermore, some activities, such as permitting, are extremely difficult to perform without local presence. Lastly, case B stated it always looks for some form of added value, which can be an effective long-term relationship, low costs, speed, etc.

Case C primarily looks for a reliable party when selecting a consultancy company. This is mainly determined by references and previous experiences. In practice this often means making a trade-off between costs and references. If there is a new consultancy company with low costs and good references, then a switch can be considered. Also, banks often do not accept reports of Turkish companies, so in those cases an international company is used for acceptance. In addition to these considerations, relationships play a role as well: "Doing business is more than opening your laptop and sending an email." Furthermore, case C explained that it would not make use of a consultancy company just because of their local presence, but because they are often more economical and usually faster.

4.2.2 Business partner selection criteria

In addition to the discussion about the process of selecting a consultancy company, the interviewees were asked to state their business partner selection criteria for consultancy companies. Not surprisingly, many of these were already mentioned during the discussion. The identified criteria for each case are listed in Table 4-2.

Table 4-2 Identified criteria

Criteria	Case A	Case B	Case C
References	x	x	x
Local branch	x	x	x
Speed	x	x	x
Reliability	x		x
Price		x	x
Acceptance by banks		x	x
Ease of working	x		
Experience		x	
Long-term relationship		x	
Previous experience			x

These criteria, together with other findings and literature, were used to create the list of criteria that was to be rated in the survey. To limit the number of criteria, no similar criteria (e.g., personal relationship and previous experience) are used. Furthermore, operational definitions of the criteria are based on literature where possible. This is the case for the criteria interpretation and advice, price and personal relationships, which are based on definitions used by Wuyts et al. (2009). Table IV-1 in Appendix IV shows the operational definitions of all criteria. The results of the survey are displayed in Table 4-3.

Table 4-3 Survey results

Criteria	Consideration				Choice				Rank[1]
	A	B	C	Mean	A	B	C	Mean	
Acknowledgement	7	7	6	6⅔	7	7	7	7	1
Quality	7	7	6	6⅔	7	7	7	7	1
Interpretation and advice	6	7	6	6⅓	6	7	7	6⅔	3
References	6	7	6	6⅓	6	7	7	6⅔	3
Promptness	7	6	6	6⅓	7	6	6	6⅓	5
Price	7	5	6	6	6	5	7	6	6
Local branch	6	6	5	5⅔	6	7	6	6⅓	6
Effectiveness	6	6	5	5⅔	6	7	5	6	8
Personal relationships	5	5	4	4⅔	6	6	5	5⅔	9

[1] Ranked by sum of consideration and choice means

5 Conclusion and discussion

The goal of this research was to assess customer needs and understand how business partners are selected, thereby increasing knowledge on investors in WEPPs in Turkey. In this final chapter this goal is realized by providing an answer for both research questions.

Furthermore, this chapter includes a discussion of the results. Subsequently, both practical and theoretical relevance are explained. Lastly, the limitations of this research are stated and suggestions for future research are made.

5.1 Main findings

An answer to the research questions will be given by reporting the main findings. The first research question is:

1) *What are the needs of investors in wind energy power plants in Turkey?*

Especially the development stage was found to be challenging, with micrositing and permitting and licensing perceived as major challenges by all three cases. Proper micrositing is crucial for future yield and therefore future returns. This is why banks are critical when it comes to micrositing, making it an essential part of receiving finance. Permitting and licensing is perceived as difficult, because the EMRA cannot properly deal with the large amount of requests and local legislation is diverse and can change over time. Also, obtaining accurate wind data was challenging for two cases due to the high accuracy required for later micrositing.

The findings relating to financing are somewhat inconsistent. One case stated that receiving finance is challenging in Turkey. However, it was acknowledged that financing conditions are difficult in general and not specific for renewables. This does, however, conflict with the opinion of another case that perceived receiving finance as relatively easy to other activities.

Relating to operation, two cases were found to have disputes with their WTG supplier. Besides the regular contract, the cases have an availability guarantee and a maintenance agreement. However, when issues arose, both cases and their WTG suppliers claimed that it fell under the responsibility of the other party. If such a dispute cannot be solved by negotiations, an independent party that is acknowledged by both parties is needed to reach a verdict. Also, there does not seem to be awareness of the possibilities for yield improvement, but a strong interest was shown for such services.

Furthermore, there are some market related findings that are deemed relevant, because they can affect the needs of WEPP investors. Firstly, many license traders seem to be active, acquiring licenses with the purpose of selling instead of developing. Secondly, there might be a difference in demand for services between IPPs owned by Turkish families and other IPPs. One of the cases was characterized by high ownership involvement by a Turkish family stated that such IPPs have a preference not to outsource. The case added that due to the expected amount of development, such IPPs might be forced to outsource in the future. Thirdly, there were conflicting findings on the use of legislation that stimulate the use of domestic production of WTGs. One case indicated that it is planning on making use of this legislation, while another case said that it was still too vague to be of use.

To conclude, it should be stated that the needs of Turkish IPPs exceed those mentioned here. In fact, IPPs that make use of consultancy companies are likely to do so for many activities. The needs presented here are the ones that are considered

particular for the Turkish market. Clearly there is a demand for a lot of the services, especially for the development stage, but most of those needs are common for any market (e.g., determining suitability of sites, support in selecting WTG models).

An answer will now be given to the second research question:

2) *How do investors in wind energy power plants in Turkey select business partners?*

The findings reveal that acknowledgement is a very important criterion. For example, if banks do not accept the micrositing of a consultancy party, the service loses much of its value the company will not be selected. Acknowledgement should therefore be considered as a requirement. Also, references are a vital criterion. They play a major role in the selection process of all cases, because the main way of judging consultancy companies beforehand is by comparing their references. The importance of both acknowledgement and references is reflected in their high ratings in the survey results, stated in Table 4-3. Two other criteria, quality, and interpretation and advice, are also among the highest rated criteria. However, they were adopted from literature and were not explicitly mentioned during the interview, suggesting a less prominent role.

Furthermore, the criterion local branch seems to play a special role. Both the interview and the survey indicate that the existence of a local branch is not especially important, but it appears the benefits that a local branch has, can be valuable. During the interviews, mentioned benefits were increased promptness, lower price and higher effectiveness. Therefore, although a local branch itself is not considered important, the benefits that come with it are.

Finally, the role of personal relations was found to be smaller than expected. Personal relationships can be regarded as a form of added value, but there are no indications that they play a critical role. During the selection process discussion, personal relationships were not mentioned as a decisive factor. This is confirmed by the survey results, with personal relationships having the lowest rating, particularly during the consideration stage.

5.2 Discussion

The findings relating to customer needs are discussed first. This includes the tracing of needs as described by Kärkkäinen et al. (2003). By making use of additional secondary data some of findings can be supported more strongly, making it possible to derive possible future needs. The results concerning partner selection are discussed afterwards.

5.2.1 Customer needs

The results give a good view of the challenges faced by Turkish IPPs. However, some findings are supported more strongly than others. The notion that the development stage is most challenging for Turkish IPPs is arguably best supported: most challenges were identified during this stage and none of the relating results were found to be contradictory. All three cases reported very similar issues with micrositing, and permitting and licensing. Furthermore, the origins of these challenges are confirmed by secondary sources. The delays in granting licenses by the EMRA are described in a report of the Netherlands Embassy (Netherlands Embassy in Ankara, 2010). The critical role of micrositing is also confirmed, as it is expected that financial institutions will have an increased focus on forecast assumptions (Rabobank, 2008).

Mixed support was found for some of the other findings. It is not sure whether Turkish IPPs perceive financing as challenging, as the statements of two cases regarding this stage differ greatly. However, the third case stated that credibility of the owning party is a major factor as financing is mostly debt based in Turkey. Indeed, the first WEPP in Turkey to be developed on a project finance basis dates from 2009 (EBRD, 2009), and no record was found of other similarly financed WEPPs. Also, banks have become more reluctant to offer debt and put more emphasis on the quality of the project developer and due diligence (Rabobank, 2008). This indicates that it is easier to receive finance for parties with a strong financial position, which is a possible explanation for the mixed findings.

There is also doubt on whether the new legislation will stimulate the domestic manufacture of WTGs. In fact, this was one of the main topics at Wind Power Turkey 2011, a major wind power event in Turkey (Green Power Conferences, 2011). This indicates that consensus on the use of these incentives is still lacking.

Lastly, there are two challenges of which the relevance is unsure, because they seem to be very specific. Both the foundation engineering and the transportation issues of case B have their origin in soil conditions. If these conditions are specific for the site of the WEPP and such conditions are not common in the rest of Turkey, then these findings become less relevant. However, wind energy companies have called the building of foundations a special process and said the construction of access roads is often necessary, because the terrain is generally difficult for suitable sites (Hürriyet Daily News, 2011). Depending on the truth of this statement, the foundation engineering and transportation issues might represent a more general trend.

5.2.1.1 Tracing of needs

By applying tracing, it is possible to extend beyond the results and to recognize needs, even though they are not expressed directly (Kärkkäinen, et al., 2003). This is speculative to some extent, because tracing involves the use of insight to derive such needs. However, by clearly stating the assumed conditions and the applied reasoning, the needs mentioned in this section should give valuable market insight. Table 5-1 shows a list of needs which have been derived from the market related findings.

Table 5-1 List of derived needs

Need	Origin
Project acquisition	
Due diligence	Acquiring license from traders
Construction	
Construction supervision	Incentives for domestic WTG production
Factory audits	Incentives for domestic WTG production
Operation	
Yield improvement	Role of owner

The existence of license traders can have it consequences for WEPP investors. From the buyer's point of view, license trading can be considered as project acquisition. In this stage project is a suitable term, as a license from the EMRA not only gives the right to produce and sell electricity, but also specifies the coordinates of the WTGs. Due to the consequences for yield, the placement of WTGs deserves attention when acquiring a license, especially because license traders are not likely to have put much effort in development. Furthermore, applying for new coordinates can be very costly and time-consuming. Therefore, a need for technical due diligence

might arise once the EMRA stops granting licenses, forcing WEPP investors to buy from license traders.

Two needs might also arise during the construction stage as a consequence of new legislation. The legislation provides incentives for domestic production of WTGs. Often, and this was confirmed for two cases, two subcontractors are used during construction: one for the civil works and one for the electrical works. However, due to the incentives, the amount of involved subcontractors might increase, as freedom to make use of foreign parties is lost, making construction and logistics increasingly difficult. This could result in an increased need for construction supervision. Secondly, a need for factory audits might arise, because the domestic suppliers are new and unknown. However, as mentioned, it is not clear whether IPPs will make use of the new incentives.

Furthermore, it is also notable that the cases did not seem aware of possibilities for yield improvement. By combining instruments such as SCADA, vibration measurements and inspections with interpretation and advice, it is often possible to increase yield with 2 to 3%, without increasing availability. This possibility was mentioned to the cases, but they were not aware of such services. They did, however, show a strong interest. The reason for the unawareness is most likely their level of involvement, which is reduced greatly during the operational stage. Arrangements in which activities like maintenance and operation are outsourced indicate a diminished role. Increased awareness can very well result in a need for yield improvement.

5.2.2 Partner selection

One of the most noticeable things of the survey results is that the ratings are relatively close to each other, making it harder to distinguish important and unimportant criteria. However, such an outcome can be the result of solely measuring the criteria that are expected to be most important. For example, ratings found by Hirakubo & Kublin (1998), who did not use a two-stage research design to determine the most relevant criteria, show a clear distinction between important and unimportant criteria: the top half of the 14 criteria has ratings between 4.2 and 4.9 on a five point Likert scale and the bottom half has ratings between 1.6 and 2.4. This shows important criteria can have ratings that are relatively close to each other.

It should also be recognized that the survey measures perception. Perception can differ significantly with actual events (Sharma, Yetton, & Crawford, 2009; Straub, Limayem, & Karahanna-Evaristo, 1995). Therefore, there might be a difference between what is perceived as an important criterion and what an important criterion is in practice. Also, the survey does not provide information on how the criteria themselves are interpreted. For example, promptness might be perceived as important, but there is no information as to what is perceived as prompt. A development period of five years might be perceived as long in Turkey, whereas in the Netherlands this is not uncommon.

Furthermore, the survey results can be misinterpreted when considered in isolation. Although acknowledgement and quality are both rated highest, they do play different roles in the business partner selection process. The quality of a consultancy company can be expressed on a scale that is somewhat continuous, whereas a company either is or is not acknowledgement by other parties. Acknowledgement should then be considered more as a requirement to be eligible for selection, whereas quality is preferred to be as high as possible. In terms of the Kano model, quality can be described as a ‘more is better’ (i.e., a characteristic for which satisfaction increases

with the level of fulfillment) and acknowledgment can be regarded a ‘must be’ (Jobber & Fahy, 2009, pp. 6-7). The criterion local branch can be seen as a ‘delighter’, not causing dissatisfaction if absent, but an advantage if present. Overlooking these characteristics can lead to misinterpretation.

5.2.2.1 Relations

Disregarding the relations between the criteria can be another source of misinterpretation. During the interviews, and especially during the discussions of the partner selection process, it became clear that the criteria cannot be seen as independent from each other. As mentioned in the main findings, references are the main criterion to assess consultancy companies. As there is no proper way to determine the quality of an unknown consultancy company, references seem to be used as an indicator for quality.

Secondly, the criterion local branch seems to be an indicator for promptness, effectiveness and price. According to case A, consultancy companies with a local branch are easier to work with and are usually faster. Increased promptness as a result of a local branch was also mentioned by case B. Relating to price, case C mentioned that it often makes use of local companies, not because they are local, but primarily because they are more economical.

Lastly, it can be argued that the criteria acknowledgement, interpretation and advice, promptness and effectiveness have overlap with the more general criterion quality (e.g., if a consultancy does not pay attention to interpretation and advice, its work is not high of quality).

5.2.2.2 Consideration and choice

With the exception of how case A rated price, all the criteria were rated equal or higher in importance for the choice stage. This might indicate that a given criterion is generally considered more important during the choice stage, possibly because the choice stage itself represents a more definite and crucial decision. However, when considering the mean value of the ratings, it can be seen that the increase in importance differs among the criteria. Especially the criteria local branch and personal relationships are rated more important during the choice stage in comparison to the consideration stage. The existence of a local branch and personal relationships are therefore probably not needed to be considered for a service, but might prove valuable for being selected during the choice stage.

5.3 Practical relevance

As illustrated by Table 1-1, wind energy in Turkey is in a rapid growth stage, making it an appealing market for entry. This research can be seen as an exploration of that market and contributes valuable findings by providing an overview of the WEPP investors in Turkey, an assessment of their challenges and needs, and increased understanding of their business partner selection process. Especially businesses offering services to WEPP investors can benefit from such information.

Furthermore, as stated in the introduction, this research is performed as part of the development of a business plan for entering the Turkish market for Mecal WFS. The scope of a business plan exceeds what has been dealt with in this research and involves factors like costs, entry modes, the internal organization, macroeconomics, etc. By taking into account such factors, the main findings can effectively be translated to recommendations. This provides guidance for Mecal WFS and demonstrates how the results of this research can be used in real practice.

5.3.1 Recommendations

Firstly, establishment of a local presence can prove to be very valuable. It can increase chances during selection process, especially during the choice stage. More importantly, however, it provides many benefits, such as the possibility to quickly and economically solve arising issues in Turkey. Moreover, some services are either too costly or too difficult to be performed without a local presence (e.g., permitting). An option to establish a local presence is to first make use of a local representative. Having a representative offers many of the benefits that a local branch office would, but at lower costs and reduced effort.

Secondly, a focus on specific services might be beneficial. Services that focus on the most challenging activities would be the most obvious choice, but some are more appropriate than others. There might be a strong need for support in permitting and licensing, but this would also be a need that is rather difficult to fulfill, as a great deal of knowledge about local legislation is required. A focus on due diligence (for project acquisition) and micrositing would be a better way to enter the market. It is likely that there is a high demand for these services and, in addition, offers involvement early on in the WEPP project. This provides the possibility for establishing a long-term relationship and can result in return business.

Thirdly, it would be wise to ensure acknowledgement by parties such as banks and WTG suppliers. Initially, existing references and dialogue can be used to receive acknowledgement by such parties. Ideally, however, Turkish references should be sufficient for getting acknowledgement. This can only be realized by remaining active in the Turkish market.

5.4 Theoretical relevance

Relating to customer needs, this research contributes to science by proposing and demonstrating a new method for the assessment of needs. Existing principles from literature have been applied outside their original context, specifically the belief that knowing the origin of needs offers is crucial and knowing the importance of needs aids in allocating resources. By using these principles, the method used in this research goes beyond just identifying customer needs.

Concerning partner selection, it was found that there are complexities that are not properly taken into account by past studies, as they are limited to measuring importance (Dawes, et al., 1992; Hirakubo & Kublin, 1998). Firstly, their designs do not offer a way to capture relations between criteria. Secondly, such designs make no distinction between criteria that can be expressed on a continuous scale (e.g., promptness expressed in days) and criteria that more or less nominal (e.g., acknowledgement expressed in yes or no). The finding of these unexpected complexities can aid in improving future research.

Furthermore, embeddedness theory, stating that actions are always both economic and social, was supported by the findings. Personal relationships were found to play a role, as they are perceived as a form of added value. However, they are considered the least important criterion, suggesting that behavior is still mostly economic.

5.5 Limitations

This research has several limitations that should be acknowledged. The more general limitations of this research will be discussed first. Next, the limitations that are specific for the research questions are considered.

5.5.1 Data source

Arguably the main limitation is that per case only one data source is used for data on customer needs and business partner selection (i.e., the employee within the organization), despite that the use of multiple sources is one of the major strengths of case studies (Yin, 2003, p. 97). This is a shortcoming that has to be coped with, as other sources used in case studies, such as documentation, archival records, direct observations (Yin, 2003, p. 86), are either not available or not likely to aid in answering the research questions.

However, several measures have been taken as to deal with issues that come with the use of this data source. In the interview multiple measures were used to answer the same question. Both questions are assessed by firstly discussing a process, followed by inquiring about the subject directly. This can be seen as a form of method triangulation (Yin, 2003, p. 99). The triangulation of data reduces systematic bias and increases credibility and quality (Patton, 2002, p. 563). Additionally, for assessing business partner selection criteria, effects that are solely the result of the employed method should be diminished further by also conducting a survey.

5.5.2 Self-report bias

One of the threats faced by the employed method is self-report bias. Research participants generally try to respond in a way that makes them look as good as possible (Donaldson & Grant-Vallone, 2002). Donaldson & Grant-Vallone (2002) argue that self-report bias is a function of the true state of affairs, nature of the construct, dispositional characteristics of the respondent and the situational characteristics. Translated to these case studies, self-report bias would be high if, for example, the organization of the interviewee experiences many difficulties (true state of affairs), the interviewee considers their challenges as sensitive information (nature of the construct), the interviewee wants to give socially desirable answers (dispositional characteristics) and the interviewee is under pressure to make the organization look good (situational characteristics).

The true state of affairs cannot be altered, but attention can be paid to the other factors. Although it is not a certainty, by selecting participants with high functions, it is expected that influence of dispositional and situational characteristics is likely to be low. As for the nature of the construct, it should be mentioned that the choice of firstly asking about past activities (e.g., typical WEPP project activities) was a conscious one: it offers the interviewee to tell their story, which is a good way to start an interview (Carson, et al., 2001, p. 76). This way, the interviewee does not have to worry what response is considered to be correct. More sensitive subjects (e.g., challenging activities) are discussed later, when the interviewee should be more at ease.

5.5.3 Customer needs

There are some limitations that are specific for the way customer needs are assessed as well. The used method is very useful as a first exploration of a market, in that it provides insight and offers great understanding that even can predict customer needs to some extent. However, for determining the importance of customer needs the method is appropriate to a lesser extent. An indication for the importance of a need is the number of cases that stated it, but because three cases are involved this only provides a very rough estimation. Furthermore, frequency of mention does not appear to be a good measure for importance (Griffin & Hauser, 1993). The origin of a need is

another way to estimate the importance (e.g., project specific needs are less important than needs caused by the market), but this involves judgment and remains vague.

Also, not all customer needs of IPPs in Turkey might be revealed, due to the number of cases in this research. A study relating to identifying customer needs suggests that three one-on-one interviews generally reveal between 65% and 70% of the total needs (Silver & Thompson, 1991). However, this was a study focused on needs for product design and involved consumers. The interviewees in this research can be considered experts in the wind energy sector, which is reason to believe that they can identify more needs than the average layman.

5.5.4 Partner selection

The method used for measuring the importance of selection criteria is similar to those of Wuyts et al. (2009) and Dawes et al. (1992), comprising of two stages: determining the relevant criteria by making use of experts and literature, and measuring their importance by conducting a survey. However, there is a significant difference. This research makes use of a multiple case study design, for which purposive sampling was used. This means the sampling is non-random and the sample itself is small (i.e., three cases), limiting the generalizability of the survey results (Kumar, 2005, pp. 169-171).

5.6 Future research

A proper way of measuring importance of customer needs is offered by QFD literature and should be very appropriate to complement the results so far. Two general options are mentioned: measuring importance for each need on a Likert-type scale or having customer allocate a number of points among all the needs (e.g., distribute 100 points among seven needs) (Griffin & Hauser, 1993). Relating to this research, a good option would be to compose a list of services that are thought to be suitable for the Turkish market and have this list measured. A sufficiently large sample should ensure generalizability.

Concerning business partner selection, the use of other data sources can be considered. Self-reports might not be the best way to determine the importance of criteria. To establish a correlation between the criteria and the chance to get selected, system-captured data is likely to be more accurate (Sharma, et al., 2009). For example, data on the number of references, costs and time to completion of considered consultancy companies for a specific service can be collected to determine their influence on the chance to get selected. This not only removes the shortcomings associated with self-reports, but also provides information on how the criteria should be interpreted (e.g., one month is considered sufficiently prompt for a specific service). However, such data is most likely hard to come by.

Furthermore, future should take into account the complexities of selection criteria found in this research. When solely measuring importance, certain characteristics and relations that are crucial for a proper understanding of the selection process are overlooked. For example, future research should be able to capture whether criteria are a ‘must-be’, because the role of such criteria differs significantly. The possibility that criteria are used as an indicator for other criteria should also be acknowledged. Incorporating such complexities in future research is not expected to be straightforward.

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Appendix I Preliminary investigation of investors

This appendix will describe the preliminary investigation of investors in wind energy power plants in Turkey. The goal is to find an answer to the following question:

Who are the investors in wind energy power plants in Turkey?

Identification of the investors in wind energy power plants (WEPPs) in Turkey is a prerequisite for determining their needs and understanding their selection process. However, relevance to science is limited, as the question is very practical in nature. Nevertheless, it forms a crucial part of this research, because answering the research questions would not be possible without it.

Furthermore, this part of the research has quite some social relevance. Investors in WEPPs in Turkey are potential customers of Mecal WFS. An accurate view of the market is necessary for making decision during the development of a business plan. When groups of potential customers are not identified, parts of the market for Mecal WFS in Turkey remain undiscovered, possibly resulting in underestimation of market size and targeting wrong segments. The detrimental implications this can have for business are evident.

I.1 General approach

Identifying investors in an unknown market comes with its set of challenges. In addition to practical difficulties such as language problems and unfamiliarity with possible data sources, not knowing what kind of parties to look for poses a problem. Investors in Turkey might be very different from the investing parties in Western markets. For example, due to the course of history in a particular country, state-owned utilities might own a large portion of the WEPPs. This need not be the same in Turkey, where state-owned utilities might possess a relative small portion of the installed wind capacity. Simply identifying such utilities in Turkey would then only reveal a small part of the total market. In order to overcome this problem, the WEPPs themselves have been taken as a starting point. Identifying investors by looking at the parties involved in WEPPs in Turkey should have the advantage of providing a more complete view of the market.

A clear definition of investors is needed to limit the scope of this research. The definition that will be used is derived from the mission statement of Mecal WFS, which is to ‘improve the value of investments in wind farms by (1) identifying and managing risks, and (2) improving yield and performance.’ Investors will be defined as parties having investments in WEPPs that can benefit from services provided by Mecal WFS.

These parties can be divided into three general groups, which all fulfill different roles with regard to WEPPs. The first group of investors that will be subject to investigation is equity providers (i.e., the owners) of the WEPPs in Turkey. They are arguably the most important stakeholders, as the success of their investments directly relates to the performance of the WEPPs. Furthermore, identification of the owners should reveal a great deal of all the parties involved. Secondly, the developers and operators, which need not be the owner, will be identified. As every WEPP needs to be developed and operated, both developers and operators are important parties with investments in WEPPs. The last group of investors that will be examined is debt providers (i.e., the banks providing loans).

The question of this appendix is answered by identifying the parties within these three groups. As the employed method for identification of each of these groups differs, the appendix is structured accordingly. The groups (i.e., owners, developers and operators, banks) are treated separately, each having their own method, results and discussion.

I.2 Owners

As said, equity providers are arguably one of the most important stakeholders and their identification is likely to reveal other important parties that are involved. This group will require owner related services (e.g., technical due diligence), aiming both at improving yield and reducing risk.

I.2.1 Method

Identification of the owners is done by mapping the shareholders of the license owner. The license owner is the company that holds the electricity production license of the EMRA for the WEPP. The licenses state the shareholders of these companies, which will be regarded as the owners. By obtaining the licenses, the shareholders can be mapped in a systematic way, providing for a solid start in the exploration of the Turkish market. Before discussing the employed method for mapping the shareholders, it is necessary to distinguish the Turkish WEPPs according to their state.

I.2.1.1 WEPP classification

The main classification of WEPPs that can be made is by state of the power plant. A WEPP can (1) solely have an electricity production license, (2) be under construction or (3) be in operation. The investments of the latter two are larger and more definite. Investments become far greater once construction starts, indicating that there is substantial commitment. Furthermore, shareholders of WEPPs under construction or in operation represent investors that have been, at least to some extent, successful in their wind energy endeavors. In a market that just started an enormous growth stage, many of the starting projects might fail because the industry has not yet matured. Therefore, it is hard to tell how successful projects will be of investors involved in WEPPs that solely own a production license. Due to the relatively small investment needed for a production license and uncertainty with regard to the success of such projects, WEPPs with solely an electricity production license are disregarded. The shareholders of the WEPPs that are under construction and the ones that are in operation will be the subject of investigation.

I.2.1.2 Calculating shares

A list of all electricity production licenses in force is made publicly available by the EMRA. This list includes WEPPs and states the license owner, the licensed capacity and the capacity that is in operation. An overview of WEPPs that are currently being built, published by the TWEA, is used to identify which WEPPs are under construction. Additionally, the licenses themselves provide for the shares of each of the shareholders in the license owner (e.g., shareholder A owns 25% and shareholder B owns 75% of license owner C). Now it can be calculated how much capacity shareholders represent, both in operation and under construction. This is done by first multiplying, for each WEPP, the shares of the shareholders in the license owner by the capacity of the WEPP. This shows how much MW of the WEPP belongs to the different shareholders. Subsequently, if a particular shareholder has shares in several WEPPs, these are summed. For example, if shareholder A has a share of 25% in license owner C, with 20 MW in operation, and a 50% share in license owner D, with 60 MW in operation, then shareholder A represents 35 MW (5 MW + 30 MW) of the operational capacity in Turkey.

I.2.1.3 Allocating shares

Many of these shareholders are companies that are part of another company. This can be for several reasons. For instance, shareholder A could be a construction company that is

owned by holding company E. This would make holding company E an indirect shareholder, but nevertheless this could be the party that acts as owner in practice and would therefore require owner related services. In order to ascribe the shares to the relevant party, for each shareholder it is identified which party in the ownership structure is most probable to act as owner. This will provide for a less scattered and more purposeful view of the market.

However, two difficulties arise in determining the relevant party. Firstly, there is no independent source for data on ownership of the shareholders. Information about ownership is therefore collected from company websites. Secondly, there is no clear unambiguous way of determining which party is most likely to require owner related services. This is not simply the ultimate owner, as even companies that are dominant in the energy sector are sometimes owned by even bigger holdings. These holdings are too high in the ownership structure to require owner related services. Because the ownership structures are very diverse, no set of predetermined rules can be used for identification. Luckily, in most cases company websites provide sufficient information to determine the party that is likely to act as owner. Most WEPPs are stated as property on company websites and in the case of indirect ownership, often the direct shareholders are mentioned as subsidiaries.

I.2.1.4 Segmentation

Additionally, the company websites are also used to collect data on size, origin and field of activity of the company that is deemed owner. Size is measured in terms of capacity in operation, regardless of the type of energy source. The capacity in operation is an indication for in-house knowledge and experience, as large established utilities are likely to have more knowledge inside the organization than small and young IPPs. The possessed knowledge and experience of owners is of influence on the type of services that are likely to be provided and therefore can be used to segment the market. Also, data on origin is important to determine how much of the market is domestic. If the market is partly foreign, origin can be used as a basis for segmentation. Lastly, field of activity refers to the power portfolio. Companies that solely own WEPPs will be labeled ‘wind’, companies that also own power plants that make use of other renewable energy sources (e.g., hydropower) will receive the label ‘RES’ and companies that produce power with non-renewable resources are labeled ‘varied’. This is a measure for the importance of wind energy within the company.

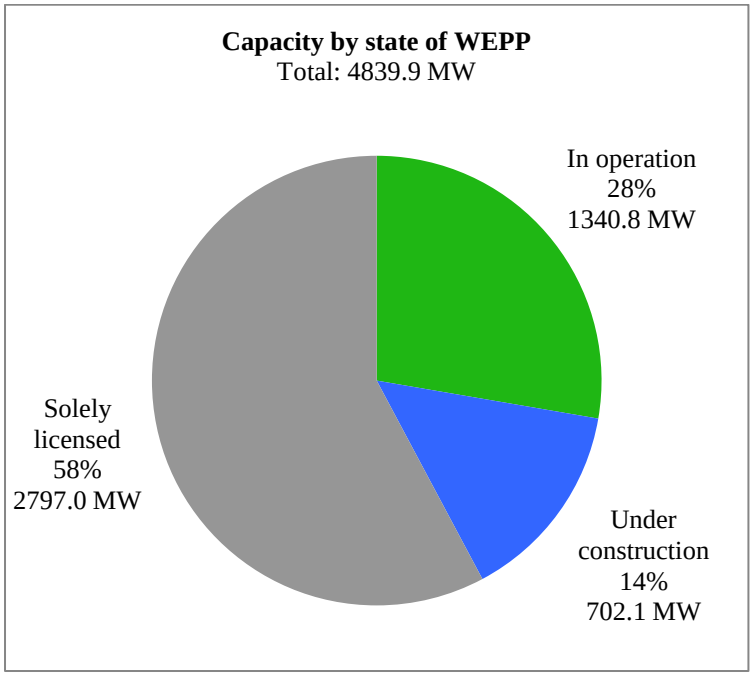
I.2.2 Results

Based on information from the EMRA and TWEA, there are 49 WEPPs under construction or in operation in Turkey with a capacity above 10 MW. Smaller WEPPs have a total capacity of 5 MW under construction and 2.4 MW in operation, accounting for only a fraction of the market. Licenses could be obtained for 46 of the 49 WEPPs. Appendix II shows the license owners and shareholders of the obtained licenses.

I.2.2.1 Wind capacity state

As stated earlier, the WEPPs can be classified into three groups, being (1) in operation, (2) under construction and (3) solely licensed. Figure I-1 shows the distribution of the WEPPs in Turkey according to these states, based on the database of the EMRA (EMRA, 2011) and reports of TWEA (TWEA, 2011a, 2011b). As of April 2011, the total capacity of outstanding licenses is 4839.9 MW. The capacity in operation is 1340.8 MW and the capacity under construction is 702.1 MW.

Figure I-1 Capacity in Turkey



I.2.2.2 Wind capacity ownership

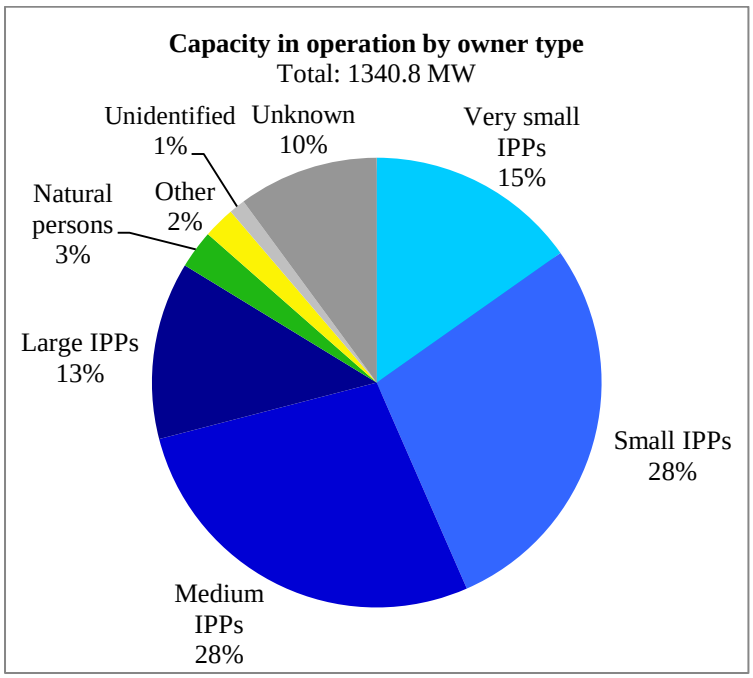
During analysis of the data (i.e., company websites of shareholders of license owner) it became clear that most owners can be identified as IPPs. In order to make distinction between the IPPs, they are classified by their total operational capacity (i.e., not solely wind capacity). The four classes of IPPs, as well as the other classes, are displayed in Table I-1.

Table I-1 Classification of owners

Class	Total capacity in operation
Very small IPPs	up to 100 MW
Small IPPs	100 – 300 MW
Medium IPPs	300 – 800 MW
Large IPPs	more than 800 MW
Natural persons	NA
Other	NA

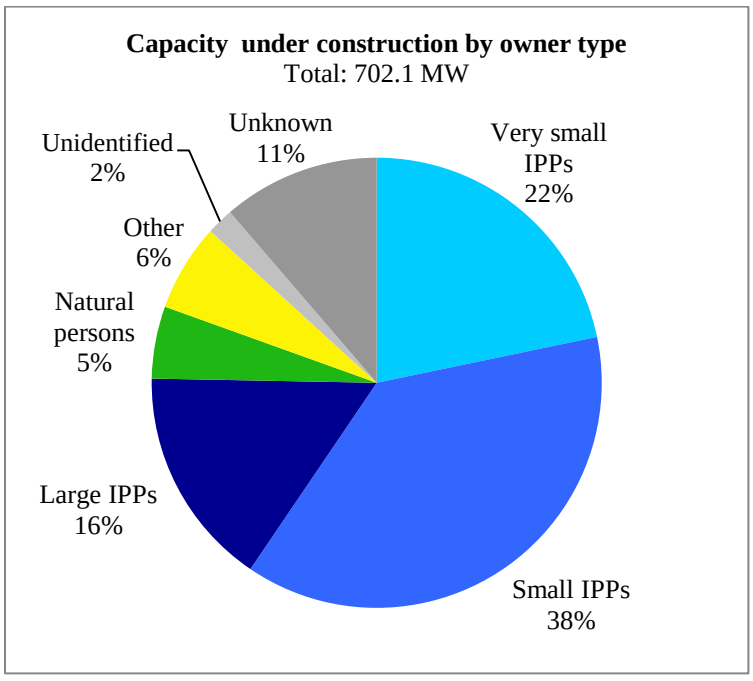
Figure I-2 illustrates the ownership of the capacity in operation by owner type. A majority of 84% (1122.6 MW) is owned by IPPs, 3% (36.9 MW) is owned by natural persons and 2% (30.5 MW) is owned by other companies. About 1% of the shareholders could not be identified and 10% is unknown, partly due to the absence of licenses and partly because shares smaller than 10% are not stated in the license.

Figure I-2 Capacity in operation



The ownership by owner type of the capacity under construction is displayed in Figure I-3. The distribution somewhat differs from the capacity in operation, but still a majority of 75% (528.6 MW) is owned by IPPs. Natural persons are better represented in the capacity under construction with 5% (36.4 MW). Other companies have a share of 6% (44.1 MW), while 2% is unidentified and 11% is unknown.

Figure I-3 Capacity under construction



I.2.2.3 Owners

Table I-2 provides an overview of the owning companies. Also stated are their origin, their capacity in operation and their capacity under construction. For IPPs it is also stated in which field they are active (i.e., kind of power production portfolio). Except for the last two

columns, the results mentioned in Table I-2 are based on company websites of the shareholders mentioned in the licenses and in some cases those of their subsidiaries or owning parties.

Table I-2 Owners (companies)

Firm	Origin	Field	CIO[1]	CUC[2]
Very small IPPs (up to 100 MW)				
Ado Enerji	Turkish	RES	13.8	
FC Enerji	Spanish (Gestamp) / Turkish (Faik Çelik Holding)	Wind	22.1	
Alto Holding	Turkish	Wind	24	
Fina Enerji	Turkish	Wind	24	
Can Enerji[3]	Turkish	Varied		40
Dost Enerji	Turkish	Wind	57.2	
Güriş Holding[4]	Turkish	RES	36	27
Ağaoğlu Enerji Grubu[5]	Turkish	RES	27.1	85.6
Small IPPs (100 – 300 MW)				
Ayen Enerji	Turkish	RES	26.8	
Borusan EnBW Enerji	German (EnBW) / Borusan (Turkish)	RES	57	
Eksim Yatırım Holding	Turkish	RES	19.8	70.4
Polat Enerji	Turkish	Wind	103	52.2
Italgen	Italian	RES		142.5
Demirer Holding[6]	Turkish	Wind	171.6	
Medium IPPs (300 – 800 MW)				
Sanko Enerji	Turkish	RES	45	
Zorlu Enerji	Turkish	Varied	108	
Bilgin Enerji[7]	Turkish	RES	216	
Large IPPs (more than 800 MW)				
Gama Enerji	American (GE Energy) / Turkish (AMA Holding)	Varied	21.6	16.8
Enerjisa	Austrian (Verbund) / Turkish (Sabancı Holding)	Varied	25.3	39
Aksa Enerji	Turkish	Varied	124.3	55.2
Other				
Enercon	German	NA	30.5	
BEST Transformatör	Turkish	NA		44.1

[1] Wind capacity in operation (MW) (EMRA, 2011; TWEA, 2011b)
[2] Wind capacity under construction (MW) (TWEA, 2011a)
[3] Shares of members of the Can family are allocated to Can Enerji.
[4] Shares of members of the Yamantürk family are allocated to Güriş Holding.
[5] Shares of members of the İbrahim Ağaoğlu family are allocated to Ağaoğlu Enerji Grubu.
[6] Shares of members of the Demirer family are allocated to Demirer Holding.
[7] Shares of members of the Bilgin family are allocated to Bilgin Enerji.

Respectively 3% and 5% of the capacity in operation and capacity under construction is found to be owned by natural persons. These are displayed in Table I-3. At first glance of Appendix II the share of capacity owned by natural persons might seem higher, but many of these shares have been allocated to the companies mentioned in Table I-2.

Table I-3 Owners (natural persons)

Name	CIO[1]	CUC[2]
Ali Raif DİNÇKÖK	1.7	0
Ömer DİNÇKÖK	1.7	0
İlhan PARSEKER	2.9	0
İrfan ACAR	2.9	0
Yılmaz ACAR	2.9	0
Çetin CEYLAN	3.8	0
Metin CEYLAN	3.8	0
Pamir SEZENER	0	4.5
Şükrü Barış KOCAGÖZ	0	8.4
Şeyhmus ÖZMEN	2.3	8
Tevfik ÖZ	14.8	0
Murat Barış TANSEVER	0	15.5

Note: Natural persons whose shares are allocated to companies are not displayed.
[1] Wind capacity in operation (MW) (EMRA, 2011; TWEA, 2011b)
[2] Wind capacity under construction (MW) (TWEA, 2011a)

I.2.2.4 Additional findings

In order to check the validity of the results, the list of owners in Table I-2 has been compared with customers of a business contact of Mecal WFS that currently provides weather forecasts for WEPPs in Turkey. All the IPPs could be confirmed as being a customer or a contact, with the exception of Italgen and three of the very small IPPs (Anonymous owner of forecasting service, personal communication, 2011, July 1). The customer base of the business contact can be seen as a subset of the customer base of Mecal WFS. Therefore, this indicates that the owners in the list are correctly identified as investors in WEPPs.

However, there also appeared to be several customers that are not mentioned in Table I-2. After analysis, these turned out to be parties lower in the ownership structure of the formerly identified owners (i.e., subsidiaries), parties that solely own a license (i.e., no wind capacity in operation or under construction) or license owners that are owned by natural persons instead of companies. The latter group calls for some further study, which resulted in the identification of four additional owners. These are displayed in Table I-4. Three of these customers were confirmed (Anonymous owner of forecasting service, personal communication, 2011, July 1).

Table I-4 Owners (license owners)

Firm	Origin	Field	LCIO[1]	LCUC[2]
Very small IPPs (up to 100 MW)				
Tefirom (owner of Bakras, license owner)	Turkish	Wind	15	
As Makinsan	Turkish	Wind	24	
ABK Enerji	Turkish	Wind		30
Medium IPPs (300 – 800 MW)				
Akenerji	Turkish	Varied	15	

Note: The term licensed is used to emphasize that the mentioned capacities do not reflect shares, but the total of the licensed capacity.
[1] Licensed wind capacity in operation (MW) (EMRA, 2011; TWEA, 2011b)
[2] Licensed wind capacity under construction (MW) (TWEA, 2011a)

These owners differ from the ones mentioned in Table I-2 in that they are not shareholders of the license owner, but the actual license owners themselves. The capacities stated in Table I-4 therefore correspond with the total licensed capacity, instead of the licensed capacity multiplied by the share of the shareholder. It is due to the used method that

these owners were not identified during earlier analysis. The employed method focused on the shareholders of the license owner. Consequently, no relevant party in the ownership structure was identified when all the shareholders turned out to be natural persons. This additional research overcomes this problem by investigating the license owners themselves. Eleven of the twelve natural persons mentioned in Table I-3 have ownership in the four found license owners. With the exception of Şeyhmus Özmen, all their shares can be reallocated to these newly discovered owners.

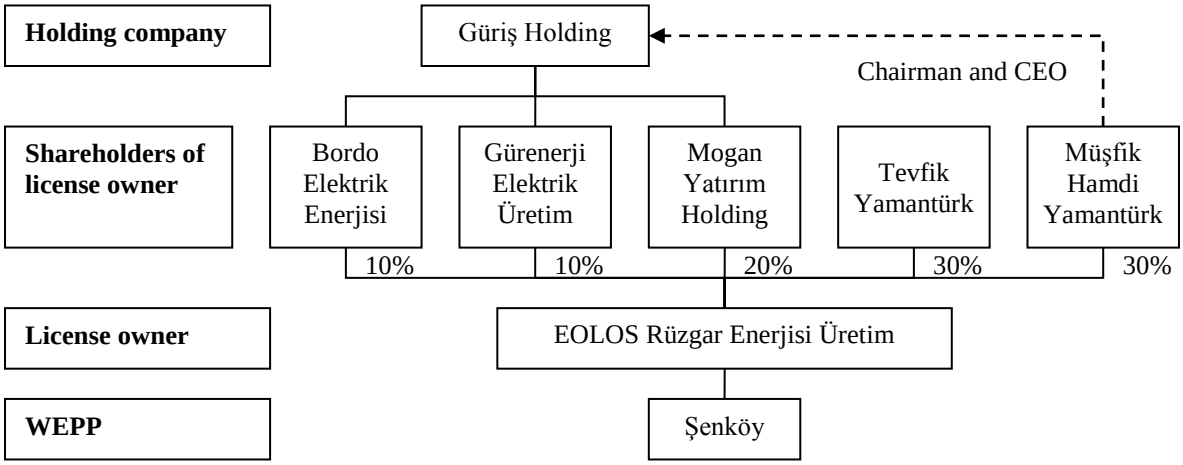
I.2.3 Discussion

Most owners have been identified as being IPPs, but there are several characteristics of IPPs in Turkey that are worth mentioning and require some further explanation. The discussion will start with expanding on ownership structures and holding companies and will conclude with some remarks on the Turkish IPPs.

I.2.3.1 Ownership structures

In order to get a better understanding of what kind of investor the shareholders represent, it is important to recognize the complexity that some ownership structures have. Figure I-4 displays the ownership structure for the 26 MW WEPP Şenköy that is under construction. The license is owned by EOLOS Rüzgar Enerjisi Üretim, which in turn is owned by three companies holding 40% and two members of the Yamantürk family, each holding 30% (EMRA, 2008). Finally, the three companies are owned by Güriş Holding, a holding company of around twenty companies, founded by the Yamantürk family (Güriş Holding, 2011). Today still, members of the Yamantürk family hold important positions within Güriş Holding with Müşfik Hamdi Yamantürk as chairman and CEO.

Figure I-4 Ownership structure of Şenköy WEPP



With so many parties involved, it can prove somewhat difficult to identify which ones are acting as the owning party of the WEPP. In the case of the Şenköy WEPP, this is most likely the indirect shareholder, Güriş Holding. The license owner, EOLOS Rüzgar Enerjisi Üretim, has been established by Güriş Holding to develop and operate the WEPP and is therefore likely to require services related to development and operation (e.g., inspections) (Güriş Holding, 2011). Güriş Holding, owning several renewable energy power plants, would be more likely to require owner related services, for example when adding an existing WEPP to their portfolio. Seemingly contradictory, the direct shareholders are not likely to act as owning parties.

A study of ownership patterns in Turkey can help explain this finding. A majority of the 100 largest Turkish traded companies are ultimately owned and controlled by families by

making use of pyramid ownership structure or through complicated inter-corporate shareholdings (Demirag & Serter, 2003). This way capital can be raised in the equity market, without losing control of the firm. Therefore, the ownership of the license owner by three companies of Güriş Holding and two members of the Yamantürk family is expected to be the result of such an ownership structure and that in practice Güriş Holding will act as owner. For this reason the shares of such direct shareholders have been attributed to the party most likely to act as owner, most often an indirect shareholder, in the results.

I.2.3.2 Holding companies

In many cases, these indirect shareholders turn out to be holding companies with activities in several sectors. Typical sectors in which the found holdings are active include energy, construction, telecom, tourism, media and textile. Activities in some of the sectors seem to complement each other. For example, often construction companies within the holding are used to build power plants for the companies active in the energy sector. It might seem reasonable to designate a company within the energy sector of a holding as the relevant party for owner related services. However, in most cases there is no single energy company within the holding that can be regarded as such. This is because the holding does not set up a single company for each sector, but several, and they assert direct control over these companies.

I.2.3.3 IPPs

In spite of activities in other sectors, such holdings have been classified as IPPs in the results. The reason for this is that when it comes to energy, their core activity is to produce power. Their involvement often stops when the produced energy is sold and delivered to the grid. The fact that some of these companies are active in other sectors is not likely to be relevant for the required services, with perhaps the exception of activities in the construction sector.

Relating to the field of activity within the energy sector, it can be seen that the smaller IPPs generally focus on wind or renewable energy. For the IPPs that make use of renewable energy sources other than wind, most of the capacity comes from hydroelectric power plants (HEPPs). The installed capacity of large IPPs comes from a variety of sources, also including non-renewable energy. They also perform utility-like activities, such as distribution and water supply.

Furthermore, two of the three large IPPs are joint-ventures of a domestic and a foreign company. Partnerships exist for other IPPs as well. For example, Demirer Holding jointly owns several WEPPs with Ado Enerji, Polat Enerji and Enercon. The latter is a wind turbine manufacturer, with which Demirer Holding built a rotorblade factory to increase local content in wind turbine manufacturing in Turkey (Demirer Holding, 2011).

I.2.3.4 Limitations

It is important to mention several limitations of the employed method, as well as some practical deviations. Firstly, in order to reduce the data that had to be analyzed, all WEPPs smaller than 10 MW have been disregarded. Secondly, only electricity production licenses issued before May 2009 could be obtained. However, this poses no significant problem, since the vast majority of the WEPPs in operation or under construction was granted a license before this date. Thirdly, shareholders owning less than 10% of the license owner are not mentioned in the licenses. Part of the WEPP owners in Turkey is therefore unknown. Furthermore, a small portion of the WEPP owners could not be identified.

Lastly, it should be mentioned that shares of several natural persons have been assigned to companies. For five families in total the shares of the family members have been

allocated to a company. In all cases the families are heavily involved in the companies, both in terms of direction and ownership. For example, Mehmet Vehbi Bilgin, representing a significant share in capacity in operation in Turkey, is also chairman of Bilgin Enerji. Not reassigning such shares from natural persons to the relevant companies would distort the results, because they are most likely the outcome of ownership structures rather than real practice ownership.

I.3 Developers and operators

The second group that is examined in order to identify investors comprises of developers and operators. Typical services include due diligence and development support for developers and inspections and yield optimization for operators. The range of services that can be provided for these investors and their involvement make knowledge about this group of great importance.

I.3.1 Method

Unfortunately, the electricity production licenses do not provide any information relating to the developer and operator of WEPPs. The two major wind energy associations, RESSİAD and TWEA, were contacted for data on developers and operators in Turkey, but without result. Luckily, there is some documentation publicly available that can offer some information. This information comes from the Gold Standard Foundation, which registers projects that reduce greenhouse emissions and certifies their carbon credits.

A carbon credit represents the reduction of one metric ton of carbon dioxide-equivalent. These credits can be bought by individuals, companies or countries to compensate for their emissions. WEPPs can generate these credits once they are certified, which is appealing for investors as this will increase their return. The Gold Standard Foundation is one of the parties that registers emission reducing projects. Some of the reports that are necessary for certification are made publicly available in their registry. The project design documents (PDDs) are especially interesting, because in many cases they mention the developer and operator. These documents are drawn up by designated operational entities, which are independent auditors authorized to validate the projects.

Therefore, all available PDDs for WEPPs in Turkey were obtained from the Gold Standard Foundation registry and analyzed. The names of the developers and operators were collected from these documents. Subsequently, these names were compared to see if they match with either the license owner or one of the shareholders.

I.3.2 Results

PDDs could be obtained for 30 of the 49 WEPPs that are operational or under construction. However, the developer and operator are not always explicitly mentioned. Table I-5 summarizes the findings. A more detailed overview of the developers and operators can be found in Appendix III.

Table I-5 Developers and operators

	Developer	**Operator**
License owner	24	11
Shareholder of license owner	4	4
Subsidiary of license owner	1	0
Not found	1	15

In 29 of the 30 examined PDDs the developer was explicitly mentioned. By far in most cases the license owner is the developer. Only five developers were found not to be the license holder, of which four are a shareholder of the license owner and one is a subsidiary. The findings relating to operators are somewhat less convincing, since in 15 of the 30 PDDs

no operator was explicitly mentioned. However, of the 15 mentioned operators, 11 are the license owner and four are a shareholder of the license owner.

I.3.3 Discussion

The findings indicate that the party responsible for development is typically the license owner. In these cases it is likely that shareholders set up a separate company that owns the license and is responsible for development, possibly for liability reasons. In some cases the company addresses of the license owner and shareholders correspond, indicating that they are closely related. The actual situation is not known, but it could be that the license owner is a separate business unit or exists of a project team within the shareholder company.

Regarding operators, the findings are less supportive for the notion that they generally are the license owner, because they are only stated in half of the PDDs. In addition to the PDDs, in some cases the owner reports being the operator on its company website. A conversation with a business contact of Mecal WFS provided some further clarification. Operation activities are usually performed by plant managers, who are employed by the owning party (i.e., the parties identified in the owners section) (Anonymous owner of forecasting service, personal communication, 2011, July 1). This was said to be common in Turkey.

Though it remains unclear how exactly the developers and operators relate to the owners, both appear to be somewhere in the ownership structure. Whether it is the license owner, one of the shareholders or a subsidiary, perhaps the most important finding is that it is not an outside party.

I.3.3.1 Limitations

The biggest limitation of the employed method is that PDDs are only available for a limited amount of WEPPs. Other registries than the one of the Gold Standard Foundation do exist and have been examined, but did not provide additional data. Nevertheless, the available PDDs should still give a useful representation of the developers and operators in Turkey.

I.4 Banks

The last group of investors in Turkey that will be studied is banks. Because banks usually provide the debt necessary to finance WEPPs, they have substantial investments and therefore perform an important role. Services provided for banks often involve risk assessment.

I.4.1 Method

The method employed for studying banks differs from those used for shareholders, developers and operators in that the WEPPs do not act as the starting point. This is due to the lack of a source that provides systematic data for the debt provided for each of the WEPPs. Therefore, a list of 45 Turkish banks has been obtained containing the total assets and total loans and receivables as of 31 December 2010 (The Banks Association of Turkey, 2011). To limit the study population, only banks with total loans and receivables above USD 250 million are studied, reducing the number of banks to 25. Because the total costs of WEPPs are generally in the USD millions, banks with total loans and receivables below USD 250 million are not expected to provide large amounts of debt for such projects.

To see which of the studied banks is providing debt for WEPP projects, company websites were thoroughly examined, including press release searches and annual report reviews. This should result in a list of Turkish banks that is involved in financing WEPPs, possibly with debt figures.

I.4.2 Results

Five Turkish banks were found to be involved in financing WEPPs. Table I-6 gives an overview of the findings. The banks are sorted by total loans and receivables in descending order. Important findings are stated in the comment column. The right column states the provided debt for WEPPs for which these figures could be obtained.

Table I-6 Turkish banks found to provide debt for WEPPs

Name (short name)	Comment	WEPPs financed (EUR mil.)
Türkiye Garanti Bankası A.Ş. (Garanti)	Provided finance for approximately half of the installed wind capacity[1] (17 WEPPs as of first quarter of 2010[2])	Çataltepe and Kuyucak (45)[2] Seyitali (30)[3] Soma (90)[4]
Akbank T.A.Ş. (Akbank)		Şah (62.7)[5]
Denizbank A.Ş. (DenizBank)	Participated as Mandated Lead Arranger in financing the Gökçedağ WEPP (135 MW)[6]	Gökçedağ (guarantees)[7]
HSBC Bank A.Ş. (HSBC)		Gökçedağ (guarantees)[7]
Türkiye Sınai Kalkınma Bankası A.Ş. (TSKB)	Provided finance for six WEPPs as of 4 April 2011[8]	Bores (unknown)[8] Karadağ and Sares (44)[9]

[1] (Garanti Bank, 2010a)
[2] (Garanti Bank, 2010b)
[3] (Garanti Bank, 2011)
[4] (Hürriyet Daily News, 2009)
[5] (Hürriyet Daily News, 2010)
[6] (DenizBank, 2010)
[7] Denizbank and HSBC provided guarantees for the EUR 30 mil. loan of the European Investment Bank (EBRD, 2009)
[8] (TSKB, 2011)
[9] (GE, 2010)

I.4.2.1 International banks

Apart from the Turkish banks, some international banks are active in financing WEPPs in Turkey. The largest operational WEPP to date in Turkey is Gökçedağ (135 MW) and was financed by the International Finance Corporation (IFC) (EUR 55 mil.), the European Bank for Reconstruction and Development (EBRD) (EUR 45 mil.) and the European Investment Bank (EIB) (EUR 30 mil.). DenizBank and HSBC provided guarantees for the loan provided by the EIB. Of the international banks, the EBRD seems to be involved in other WEPPs as well. They launched the Mid-size Sustainable Energy Financing Facility (MidSEFF) in order to support Turkey's investments in renewable energy and energy efficiency. Two 30 MW WEPPs have been financed through this facility in cooperation with Garanti and the EIB (EBRD Communications Department, personal communication, 2011, June 13).

I.4.3 Discussion

Garanti, the largest Turkish bank in terms of total loans and receivables on 31 December 2010 (USD 42,161 mil.), seems to be the most involved in providing finance for WEPPs in Turkey. Garanti claims it financed approximately half of the installed wind power capacity of 1,270 MW in its annual report of 2010 (Garanti Bank, 2010a). However, whether they were the sole provider of debt for these projects or only provided a portion of the total debt remains unclear from this statement. Nevertheless, they helped financing 17 WEPPs by the first quarter of 2010 (Garanti Bank, 2010b).

The second most important provider of debt for WEPPs appears to be TSKB. Having provided finance for six WEPPs as of 4 April 2011, they remain ahead of the other banks (TSKB, 2011). Although it cannot be ruled out, it is unlikely that there are banks other than Garanti that have provided more debt for WEPPs. Other than the Şah and Gökçedağ WEPPs mentioned in Table I-6, no records were found for financing WEPPs by the three other active banks, Akbank, DenizBank and HSBC.

Clearly, the found data does in no way provide a complete view of the debt provided for WEPPs in Turkey. For example, only debt figures of four of the 17 WEPPs financed by Garanti could be found. It can be assumed that only a portion of all the financing is represented in the results, but depending on the overlap in the WEPPs financed by Garanti, TSKB and other banks, the collected data involves up to 25 WEPPs. Therefore, the results provide a useful indication of which banks are positioning themselves as debt providers for Turkish WEPPs and therefore are likely to be among the major investors.

I.4.3.1 Limitations

Firstly, it must be acknowledged that some banks might provide debt to WEPPs without this being mentioned in any publicly available source. Only data that is publicly accessible was obtained, so parts of the market will remain unknown. In addition, it is expected that only part of the accessible information was found, further reducing the part of the market that is discovered. Secondly, foreign banks that provide financing for WEPPs in Turkey are investors, but are omitted from the results. The study population would become too vast and, perhaps more important, foreign banks are not investors located in Turkey.

I.5 Conclusion

This appendix has provided an answer to the question who the investors in WEPPs in Turkey are by investigating the owners, developers and operators, and banks. This has generated some valuable insights in the Turkish market. The most important finding concerns the ownership of the Turkish WEPPs. For a great deal of the capacity, it has become clear how and by whom it is owned. The results indicate that ownership is dominated by IPPs that are either completely or partially Turkish. Data about size and field of activity, by which segmentation can take place, has also been collected. Furthermore, the results relating to developers and operators suggest that both development and operational activities are generally performed within the ownership structure (i.e., by the license owner or its shareholder). Also, five Turkish banks have been identified to be active in financing WEPPs in Turkey.

The collected information about the owners, developers, operators and banks, all important stakeholders in the WEPP, is useful for further research. Assessment of customer needs and business partner selection processes is made possible, because now the Turkish investors are known to a large extent.

Appendix II Shareholders

Table II-1 Shareholders as mentioned in electricity production licenses

WEPP name	CIO[1]	CUC[2]	License owner	Prime shareholder (share in %)	Second shareholder (share in %)
Akbük	31.5		Ayen Enerji A.Ş.	Aydıner İnşaat A.Ş. (85)	
Akhisar		45	Akhisar Rüzgar Enerjisinden Elektrik Üretimi Santralı Ltd. Şti.	Karesi Enerji A.Ş. (98)	
Aliağa	90		Bergama RES Enerji Üretim A.Ş.	Mehmet Vehbi BİLGİN (87)	
Ayyıldız	15		Akenerji Elektrik Üretim A.Ş.	Akkök Sanayi Yatırım ve Geliştirme A.Ş. (41)	Ömer DİNÇKÖK (12)
Balıkesir		142.5	Bares Elektrik Üretim A.Ş.	Italgen Elektrik Üretim Anonim Şirketi (100)	
Bandırma	57		Bandırma Enerji ve Elektrik Üretim A.Ş.	Borusan Enerji Yatırımları ve Üretim A.Ş. (100)	
Bandırma	30		Yapısan Elektrik Üretim A.Ş.	Yapısan İnşaat Elektrik Sanayi ve Ticaret A.Ş. (63)	Mehmet Vehbi BİLGİN (31)
Bandırma-3	24		As Makinsan Temiz Enerji Elektrik Üretim San. ve Tic. A.Ş.	Çetin CEYLAN (16)	Metin CEYLAN (16)
Bangüç		15	Bangüç Bandırma Elektrik Üretim Anonim Şirketi	Güçbirliği Holding A.Ş. (55)	İzmir Enerji San. Ve Tic. A.Ş. (35)
Belen	36		Belen Elektrik Üretim A.Ş.	Tevfik YAMANTÜRK (25)	Müşfik Hamdi YAMANTÜRK (25)
Burgaz	14.9		Doğal Enerji Elektrik Üretim A.Ş.	Polat Enerji San. ve Tic. A.Ş. (50)	Demirer Enerji Üretim Sanayi ve Ticaret A.Ş. (26)
Çamseki	20.8		Alize Enerji Elektrik Üretim A.Ş.	Demirer Enerji Üretim Sanayi ve Ticaret A.Ş. (76)	Bores Bozcaada Rüzgar Enerji Santralı Sanayi ve Ticaret A.Ş. (24)
Çanakkale	25.3		Enerjisa Enerji Üretim A.Ş.	Österreichische Elektrizitatswirtschafts-Aktiengesellschatf (Verbund) (50)	Hacı Ömer Sabancı Holding A.Ş. (50)
Çatalca	60		Sanko Rüzgar Enerjisi Sanayi ve Tic. A.Ş.	Sanko Enerji Üretim Sanayi ve Ticaret A.Ş. (75)	
Datça	29.6		Dares Datça Rüzgar Enerji Santralı Sanayi ve Ticaret A.Ş.	Enercon GmbH (50)	Demirer Enerji Üretim Sanayi ve Ticaret A.Ş. (50)
Düzova	30		Ütopya Elektrik Üretim Sanayi ve Ticaret Anonim Şirketi	Fina Enerji Holding A.Ş. (80)	İroni Yaşam Kaynakları En.Ür.San.veTic.A.Ş. (15)
Gökçedağ	135		Rotor Elektrik Üretim A.Ş.	Zorlu Enerji Elektrik Üretim A.Ş. (80)	
İntepe	30.4		Anemon Enerji Elektrik Üretim A.Ş.	Ado Enerji Üretim San. Ve Tic A.Ş. (45)	Demirer Enerji Üretim Sanayi ve Ticaret A.Ş. (43)
Kapıdağ		34.9	Kapıdağ Rüzgar Enerjisi Santralı Elektrik Üretim San. ve Tic.A.Ş.	Kazancı Holding A.Ş. (93)	
Karadağ		10	Garet Enerji Üretim ve Ticaret A.Ş.	Gama Enerji A.Ş. (96)	
Karakurt	10.8		Deniz Elektrik Üretim Limited Şirketi	Aksa Enerji Üretim A.Ş. (95)	
Kayadüzü		40	Baktepe Enerji A.Ş.	İltek İletişim Teknolojileri A.Ş. (88)	Şeyhmus ÖZMEN (10)
Keltepe	20.7		Alize Enerji Elektrik Üretim A.Ş.	Demirer Enerji Üretim Sanayi ve Ticaret A.Ş. (76)	Bores Bozcaada Rüzgar Enerji

					Santralı Sanayi ve Ticaret A.Ş. (24)
Kemerburgaz	24		Lodos Elektrik Üretim A.Ş.	Alto Holding A.Ş. (100)	
Killik		40	PEM Enerji A.Ş.	İltek İletişim Teknolojileri A.Ş. (88)	Şeyhmus ÖZMEN (10)
Kocadağ-2	15		Kores Kocadağ Rüzgar Enerji Santralı Üretim A.Ş.	Dost Enerji Üretim Sanayi ve Ticaret A.Ş. (98)	
Kuyucak	25.6		Alize Enerji Elektrik Üretim A.Ş.	Demirer Enerji Üretim Sanayi ve Ticaret A.Ş. (76)	Bores Bozcaada Rüzgar Enerji Santralı Sanayi ve Ticaret A.Ş. ((24)
Mazı-1	39.2		Mare Manastır Rüzgar Enerji Santralı San. Ve Tic. A.Ş.	Demirer Enerji Üretim Sanayi ve Ticaret A.Ş. (60)	Enercon GmbH (40)
Mazı-3	30		Yapısan Elektrik Üretim A.Ş.	Yapısan Elektrik Üretim A.Ş. (45)	Mehmet Vehbi BİLGİN (30)
Mersin	33		Akdeniz Elektrik Üretim A.Ş.	Ali İBRAHİMAĞAOĞLU (41)	Hüseyin Avni İBRAHİMAĞAOĞLU (41)
Metristepe		40	Can Enerji Entegre Elektrik Üretim A.Ş.	Recep CAN (20)	Mustafa CAN (20)
Şah		93	Galata Wind Enerji Ltd. Şti.	Ali İBRAHİMAĞAOĞLU (55)	Hüseyin Avni İBRAHİMAĞAOĞLU (37)
Şamlı	90	24	Baki Elektrik Üretim Ltd. Şti.	Aksa Enerji Üretim A.Ş. (95)	
Sares	22.5	7.5	Garet Enerji Üretim ve Ticaret A.Ş.	Gama Enerji A.Ş. (96)	
Sarıkaya	28.8		Alize Enerji Elektrik Üretim A.Ş.	Demirer Enerji Üretim Sanayi ve Ticaret A.Ş. (76)	Bores Bozcaada Rüzgar Enerji Santralı Sanayi ve Ticaret A.Ş. (24)
Sayalar	34.2		Doğal Enerji Elektrik Üretim A.Ş.	Polat Enerji San. ve Tic. A.Ş. (50)	Demirer Enerji Üretim Sanayi ve Ticaret A.Ş. (26)
Sebenoba	30		Deniz Elektrik Üretim Limited Şirketi	Aksa Enerji Üretim A.Ş. (95)	
Şenbük	15		Bakras Enerji Elektrik Üretim ve Ticaret Ltd. Şti.	Tevfik ÖZ (99)	
Şenköy		26	EOLOS Rüzgar Enerjisi Üretim Anonim Şirketi	Tevfik YAMANTÜRK (30)	Müşfik Hamdi YAMANTÜRK (30)
Söke-Çatalbük		30	ABK Enerji Üretmek Projelerini Geliştirme İnşaat Turizm Nakliyat San ve Tic. A.Ş.	Murat Barış TANSEVER (52)	Şükrü Barış KOCAGÖZ (28)
Soma	90		Bilgin Rüzgar Santrali Elektrik Üretim A.Ş.	Mehmet Vehbi BİLGİN (65)	Yapısan İnşaat Elektrik Sanayi ve Ticaret A.Ş. (15)
Soma	78.5	52.2	Soma Enerji Elektrik Üretim A.Ş.	Polat Enerji San. ve Tic. A.Ş. (100)	
Susurluk	22.5		Alentek Enerji A.Ş.	İltek İletişim Teknolojileri A.Ş. (88)	Şeyhmus ÖZMEN (10)
Turguttepe	24		Sabaş Elektrik Üretim A.Ş.	FC Enerji Elektrik Üretim Tic. Ve San. A.Ş. (92)	
Yuntdağ	42.5		İnnores Elektrik Üretim Ltd. Şti.	Dost Enerji Üretim Sanayi ve Ticaret A.Ş. (100)	

Note: Shareholders holding smaller shares than prime and second shareholder are not displayed. They have, however, been incorporated during data analysis.

[1] Capacity in operation (MW)

[2] Capacity under construction (MW)

Appendix III Developers and operators

Table III-1 Developers and operators as mentioned in PDDs

WEPP name	License owner	Developer	Operator
Akbük	Ayen Enerji A.Ş.	License owner	Not found
Ayyıldız	Akenerji Elektrik Üretim A.Ş.	License owner	Not found
Bandırma-3	As Makinsan Temiz Enerji Elektrik Üretim San. ve Tic. A.Ş.	License owner	Not found
Burgaz	Doğal Enerji Elektrik Üretim A.Ş.	License owner	Not found
Çamseki	Alize Enerji Elektrik Üretim A.Ş.	License owner	License owner
Çatalca	Sanko Rüzgar Enerjisi Sanayi ve Tic. A.Ş.	Ertürk Elektrik Üretim A.S.[1]	License owner
Çataltepe	Alize Enerji Elektrik Üretim A.Ş.	License owner	Not found
Datça	Dares Datça Rüzgar Enerji Santralı Sanayi ve Ticaret A.Ş.	License owner	License owner
Düzova	Ütopya Elektrik Üretim Sanayi ve Ticaret Anonim Şirketi	License owner	Not found
Gökçedağ	Rotor Elektrik Üretim A.Ş.	License owner	License owner
İntepe	Anemon Enerji Elektrik Üretim A.Ş.	Demirer Holding[2]	Demirer Holding[2]
Kapıdağ	Kapıdağ Rüzgar Enerjisi Santralı Elektrik Üretim San. ve Tic.A.Ş.	License owner	Not found
Karaburun	Lodos Elektrik Üretim A.Ş.	License owner	License owner
Karakurt	Deniz Elektrik Üretim Limited Şirketi	License owner	Not found
Keltepe	Alize Enerji Elektrik Üretim A.Ş.	License owner	License owner
Kemerburgaz	Lodos Elektrik Üretim A.Ş.	License owner	License owner
Killik	PEM Enerji A.Ş.	License owner	Not found
Kocadağ-2	Kores Kocadağ Rüzgar Enerji Santralı Üretim A.Ş.	Dost Enerji[2]	Not found
Kuyucak	Alize Enerji Elektrik Üretim A.Ş.	License owner	License owner
Mazı-1	Mare Manastır Rüzgar Enerji Santralı San. Ve Tic. A.Ş.	Demirer Holding[2]	Demirer Holding[2]
Mazı-3	Yapısan Elektrik Üretim A.Ş.	Not found	Not found
Şah	Galata Wind Enerji Ltd. Şti.	License owner	Not found
Şamlı	Baki Elektrik Üretim Ltd. Şti.	License owner	Not found
Sarıkaya	Alize Enerji Elektrik Üretim A.Ş.	License owner	License owner
Sayalar	Doğal Enerji Elektrik Üretim A.Ş.	Demirer Holding[2]	Demirer Holding[2]
Sebenoba	Deniz Elektrik Üretim Limited Şirketi	License owner	License owner
Şenbük	Bakras Enerji Elektrik Üretim ve Ticaret Ltd. Şti.	License owner	License owner
Söke-Çatalbük	ABK Enerji Üretmek Projelerini Geliştirme İnşaat Turizm Nakliyat San ve Tic. A.Ş.	License owner	Not found
Soma	Soma Enerji Elektrik Üretim A.Ş.	License owner	Not found
Yuntdağ	İnnores Elektrik Üretim Ltd. Şti.	License owner	Dost Enerji[2]

[1] Ertürk Elektrik Üretim is a subsidiary of Sanko Enerji

[2] Shareholder of license owner

Appendix IV Survey

In the survey the respondent were asked to rate the importance of the same criteria for two points in time when selecting consultancy companies. Firstly, they were asked to rate the criteria for when they are making the shortlist, which refers to the consideration stage. Secondly, they were asked to rate the criteria for when they select from the shortlist, which refers to the choice stage. The reason for this formulation is that the concepts of making the shortlist and selecting from the shortlist are more easily explainable and appeal to the imagination of the respondents. The questions were formulated as follows:

1) *When making the shortlist, how would you rate the following criteria ranging from 1 (not important) to 7 (very important)?*
2) *When selecting from the shortlist, how would you rate the following criteria ranging from 1 (not important) to 7 (very important)?*

Both questions were accompanied by a list with the same criteria which were to be rated. The operational definitions of the criteria are shown in Table IV-1.

Table IV-1 Operational definitions of criteria

Criteria[1]	**Definition**
Interpretation and advice	Next to reporting results, the consultancy company pays much attention to interpretation and advice.
Local branch	The consultancy company has a branch office in Turkey.
Price	The costs of the consultancy company are competitive.
Acknowledgement	Other stakeholders, such as banks, insurances and manufacturers, recognize and accept conclusions drawn by the consultancy company.
References	The consultancy company has a good track record with established companies.
Promptness	The consultancy company can quickly deliver results.
Personal relationships	Your company has good personal relationships with employees of the consultancy company.
Effectiveness	The consultancy company can adapt to the situation at hand and remains effective under different circumstances.
Quality	The consultancy company delivers high quality work.

[1] Randomly ordered as presented to respondents

Figure IV-1 until Figure IV-4 show the pages of the actual web survey.

Figure IV-1 Page 1 of survey

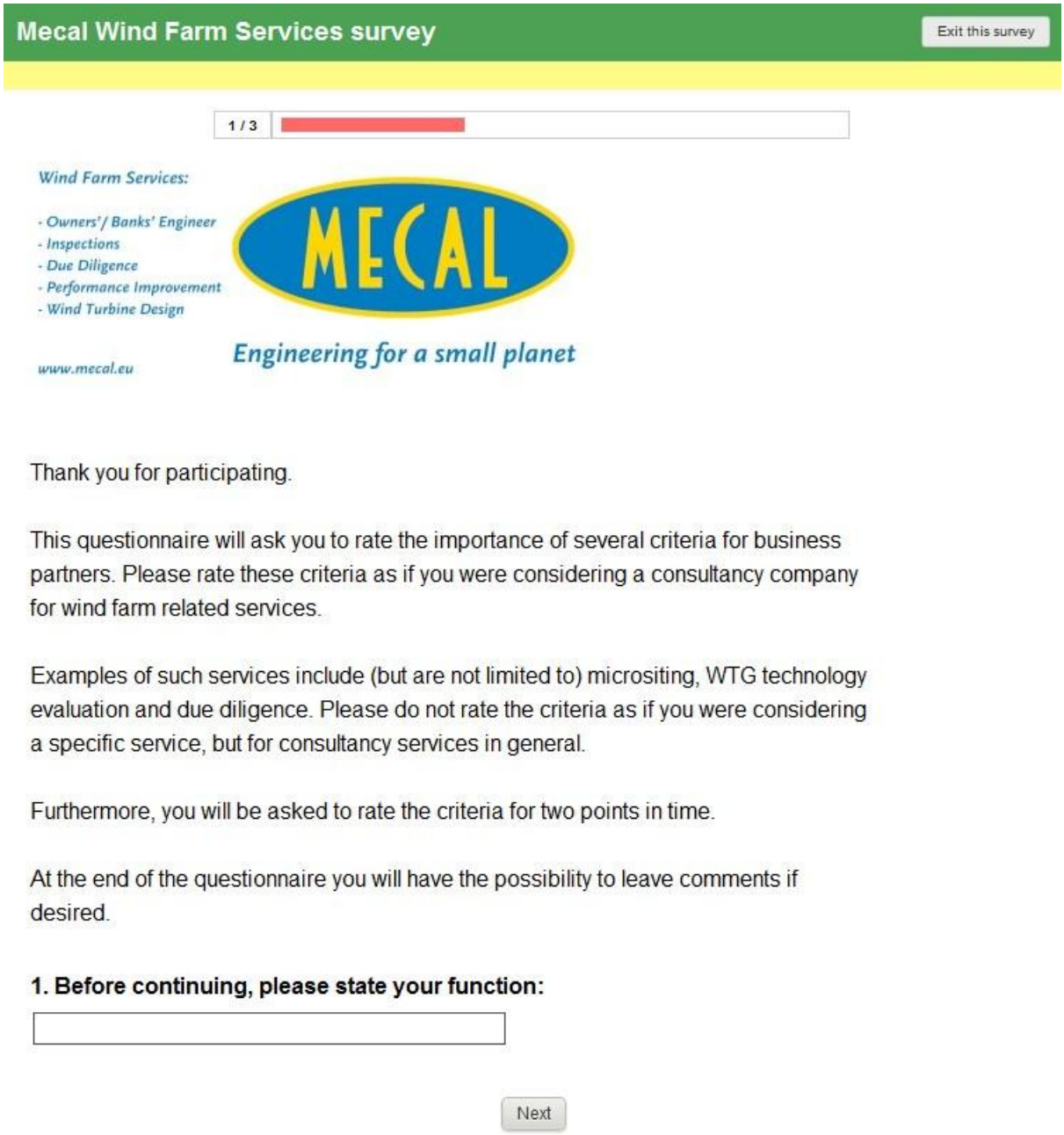
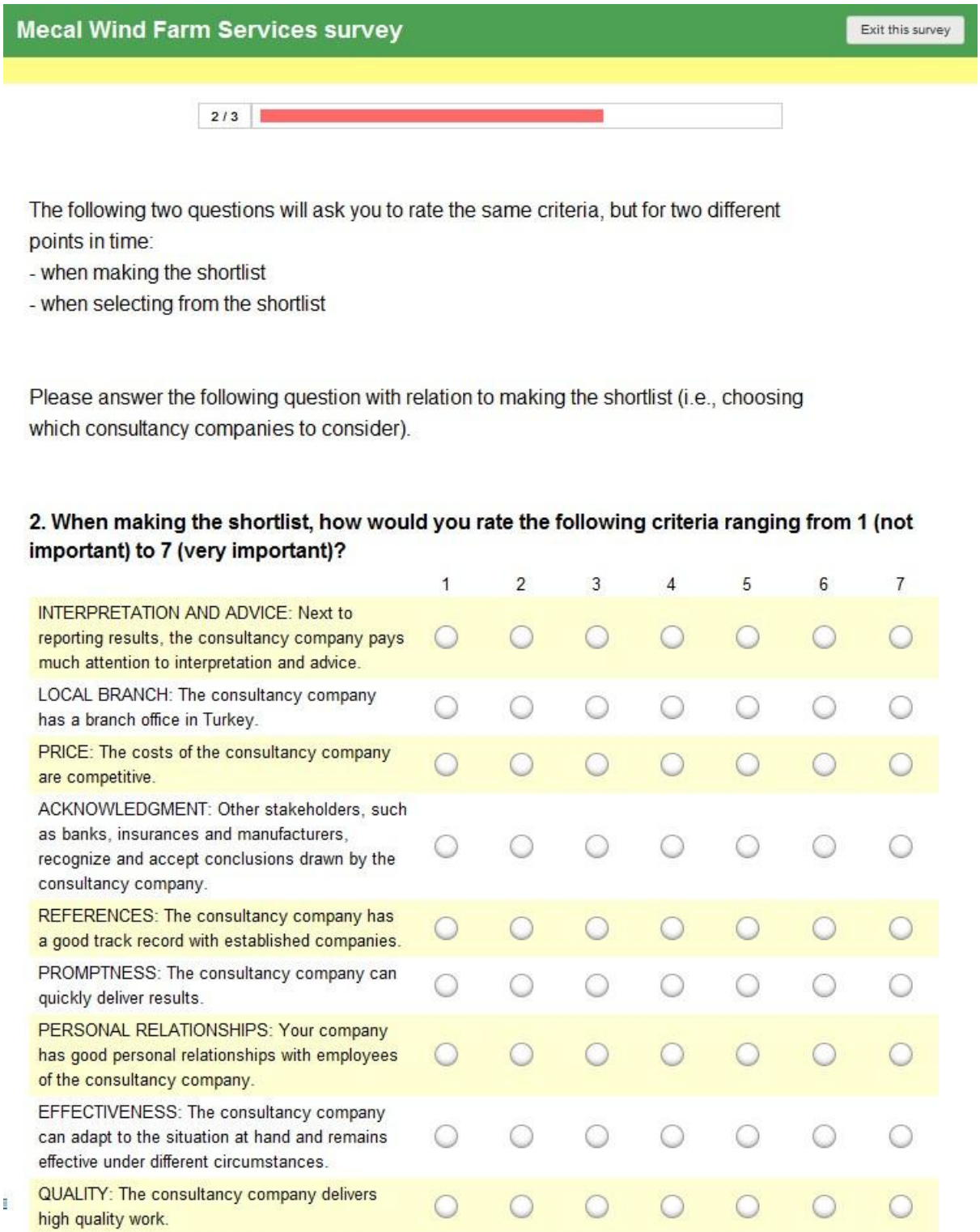


Figure IV-2 Page 2 of survey (part 1)



Mecal Wind Farm Services survey

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The following two questions will ask you to rate the same criteria, but for two different points in time:
- when making the shortlist
- when selecting from the shortlist

Please answer the following question with relation to making the shortlist (i.e., choosing which consultancy companies to consider).

2. When making the shortlist, how would you rate the following criteria ranging from 1 (not important) to 7 (very important)?

	1	2	3	4	5	6	7
INTERPRETATION AND ADVICE: Next to reporting results, the consultancy company pays much attention to interpretation and advice.	○	○	○	○	○	○	○
LOCAL BRANCH: The consultancy company has a branch office in Turkey.	○	○	○	○	○	○	○
PRICE: The costs of the consultancy company are competitive.	○	○	○	○	○	○	○
ACKNOWLEDGMENT: Other stakeholders, such as banks, insurances and manufacturers, recognize and accept conclusions drawn by the consultancy company.	○	○	○	○	○	○	○
REFERENCES: The consultancy company has a good track record with established companies.	○	○	○	○	○	○	○
PROMPTNESS: The consultancy company can quickly deliver results.	○	○	○	○	○	○	○
PERSONAL RELATIONSHIPS: Your company has good personal relationships with employees of the consultancy company.	○	○	○	○	○	○	○
EFFECTIVENESS: The consultancy company can adapt to the situation at hand and remains effective under different circumstances.	○	○	○	○	○	○	○
QUALITY: The consultancy company delivers high quality work.	○	○	○	○	○	○	○

Figure IV-3 Page 2 of survey (part 2)

Please answer the following question with relation to selecting from the shortlist (i.e., choose which consultancy company will ultimately receive the job).

3. When selecting from the shortlist, how would you rate the following criteria ranging from 1 (not important) to 7 (very important)?

	1	2	3	4	5	6	7
INTERPRETATION AND ADVICE: Next to reporting results, the consultancy company pays much attention to interpretation and advice.	○	○	○	○	○	○	○
LOCAL BRANCH: The consultancy company has a branch office in Turkey.	○	○	○	○	○	○	○
PRICE: The costs of the consultancy company are competitive.	○	○	○	○	○	○	○
ACKNOWLEDGMENT: Other stakeholders, such as banks, insurances and manufacturers, recognize and accept conclusions drawn by the consultancy company.	○	○	○	○	○	○	○
REFERENCES: The consultancy company has a good track record with established companies.	○	○	○	○	○	○	○
PROMPTNESS: The consultancy company can quickly deliver results.	○	○	○	○	○	○	○
PERSONAL RELATIONSHIPS: Your company has good personal relationships with employees of the consultancy company.	○	○	○	○	○	○	○
EFFECTIVENESS: The consultancy company can adapt to the situation at hand and remains effective under different circumstances.	○	○	○	○	○	○	○
QUALITY: The consultancy company delivers high quality work.	○	○	○	○	○	○	○

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Figure IV-4 Page 3 of survey