

MARKETING STRATEGY FOR RETAILING
SMALL-SCALE WIND ENERGY TURBINES
IN INDIAN MARKETS

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ABSTRACT

The study analyzes the small-scale wind energy markets in Mumbai, focusing on questions: How feasible is the wind energy for SME businesses in Mumbai, and what are the main challenges and opportunities of small-scale wind energy in Mumbai?

The study is a qualitative case study, in which, the data has been collected through observing the markets by visiting wind energy sites and companies, interviewing and meeting potential customers and other stakeholders in the market. Theoretical framework consists of development of a marketing strategy, segmentation of the markets and a marketing mix.

The market is new and almost untouched, most of the companies interviewed have not been offered wind energy. The demand for energy is high and growing with speed. The current energy shortage during the year 2008 was 9.3 % and the peak shortage 12,6 %.

The growth of the economy in the area is one of the highest in the world and it is burdening the nature with CO₂ emission because India is still mainly depending on fossil fuels. The compelling need for back-up energy systems in companies is solved mainly with diesel generators, and adding to the electricity bill, they make the energy prices for commercial consumers high.

Small-scale wind energy would definitely bring ease to the peak times in the main grid and due to the low level of regulations, in the country, it is also quite easy to access.

The marketing strategy choices are direct sales of wind turbines and power purchase agreements (PPA). The recommendation is to enter the market through a joint venture with an Indian company and to pursue the power purchase agreements which show a huge potential. The power purchase agreements open up new possibilities to offer environmentally friendly and CO₂ emission free energy for those, who could not financially afford the change themselves.

Keywords: Wind energy, renewable energy, small-scale wind turbine, marketing strategy, Mumbai, India, urban sites.

CONTENTS

1	INTRODUCTION	1
1.1	Background	1
1.2	Research objectives, questions and limitations	6
1.3	Theoretical framework	8
1.4	Research approach, methodologies and empirical study	10
1.5	Case company	12
1.6	Structure of the research	12
2	THEORETICAL FRAMEWORK OF MARKETING STRATEGY	14
2.1	Marketing strategy	19
2.2	Statement of objectives	22
2.3	Situational analysis	22
2.4	Market segmentation	26
2.4.1	Segmenting business markets	28
2.4.2	Choices of segmentation research	30
2.5	Marketing mix	31
2.6	Business model	37
2.7	Summary of the theoretical framework	38
3	RESEARCH APPROACH AND METHODS	39
3.1	Evaluating the different approaches	39
3.2	Qualitative interviews and other ways of collecting the data	44
3.3	Ways to analyze and present the qualitative data	46
3.4	Summary of the research approach and methods	47
4	DEVELOPING A MARKETING STRATEGY FOR THE CASE COMPANY	48
4.1	Study of the case company	48
4.2	Statement of the strategic objectives	51
4.3	Situational analysis	52

4.3.1	Micro environment	53
4.3.2	Macro environment	57
4.4	Segmentation of the market before the field trip	66
4.5	Further segmentation of the market after the field trip	71
4.6	Marketing mix	80
4.6.1	Product- 4 kW wind turbine	81
4.6.2	Price as part of the marketing mix	87
4.6.3	Place/Distribution as part of the marketing mix	89
4.6.4	Promotion	90
4.6.5	People, process and physical evidence	92
4.7	Recommended business model and marketing strategy	96
4.8	Summary of the analysis	97
5	CONCLUSIONS	99

REFERENCES

APPENDICES

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And now, I have a dream: I am walking the streets of Mumbai and enjoying the sight of small wind turbines spinning on the rooftops.

1 INTRODUCTION

This study is set out to determine the feasibility and the markets for small-scale wind energy turbines in Mumbai, India. The introduction part of the thesis, will present the background of this study, pointing out the reasons for choosing this subject. There will also be short discussion about the environment where the wind energy industry is evolving and what kind of challenges or opportunities it might have in the future. Furthermore, an explanation of the objectives, questions and limitations of this study are given and a brief introduction to the theoretical background and the research approach chosen.

1.1 Background

Finland is a country with many innovations and technological breakthroughs. For many technology companies, the markets in Finland, become quickly too small for financing the company's growth and further R&D of the products. Because of that, the need for finding international market options and strategies comes often in an early development phase, when most of the company's own resources are still occupied with starting the production and operations. On the other hand, the planning and executing of internationalization could be outsourced more than they are. A new technology always needs to find its way to the markets before being a success. Cooperation between experts in engineering and marketing is important when finding innovative approaches and business models.

Ph.D Pekka Himanen (2007) states in his "The Finnish dream, Innovation report" that there are five types of innovation: technological, business, design, product/service and cultural innovation. He claims in his study that:

The best ideas will not win, but best ideas that are developed into practice will win (products/services). And actually in the end the products are not competing with each other but the business models are competing – and the best business model will win. (Himanen, 2007) (translation by author)

Overall, there is a need for research for different marketing and internationalization strategies for the small and medium sized companies in Finland. How to make a success out of a technological innovation is the key dilemma.

The energy market in India has a lot of potential, the country is suffering from lack of energy and the striving, rapidly growing economy keeps increasing the demand. (Akhter et al, 2008) India is still heavily depending on fossil fuels to satisfy its energy needs, mainly coal. The challenges are multiple: exhaustion of fossil fuel reserves, global warming, possible geopolitical and military conflicts and continuous fuel price rise. (Muneer, 2005) According to Mr Muneer's (2005) study the respective local oil reserves of India will last only six years - until 2011. According to the Ministry of Power, the overall generation of energy in India is 723.794 BU during the year 2008-09 (Government of India, Ministry of Power, 2009) and a study by the government shows that the energy shortage during the year 2008 was 9,3 % and the peak shortage 12,6 % in the country. The same study also claims that 10 out of 28 states will face a peak power deficit of above 20 % in the coming years, among these states, Maharashtra. (Subramaniam K. 2009)

The government in India is implementing one of the largest programs in the field of renewable energy in the world and, at the moment, renewable energy contributes to about 5 % of the total power generating capacity in India. According to the Ministry of Non-Conventional Energy Sources, the estimated potential of wind power in India is 45 000 MW, while the installed capacity is only 3.595 MW. (Government of India, Ministry of Non-Conventional Energy Sources, 2009)

Wind energy is already in the market but it is usually manufactured in large size turbines needing lots of space and a good wind environment. The definition of small-scale wind turbines varies a little depending on the source. In Finland most of the sources define small-scale wind turbines by the production capacity maximum 20 kW. (Finnish Wind Power Association, 2009) The other definition used is production capacity less than 50 kW (Carbon Trust UK, 2008).

A wind turbine of 4 kW is estimated to produce 14.000 kWh in a year, with good wind circumstances. (My Power Finland, 2009) A small-scale wind turbine, in general, requires 2-3 m/s wind speed in order to start producing energy, and the nominal productivity is reached with 8-10 m/s wind speed. Motiva studies the electricity use of households in Finland and has compared the average consumption per household in between different housing types: houses, townhouses and apartments. To give a perspective for the potential usage of a small wind turbine with an average annual production of, for example, 14.000 kWh, the researcher examined the electricity consumption of an average house in Finland. According to Motiva, in the year 2006, an average house with average electrical equipment and a family of four living in it used 7.000 kWh of electricity excluding the heating. (Motiva, 2009). My family of five, for example, lives in a 210 m² house, and the yearly electricity consumption without heating was approximately 7.000 kWh during the year 2008. For the heating we used 25.000 kWh through a district heating service provider. The overall annual energy consumption of our household adds up to 32.000 kWh. It appears that in good wind circumstances a 4 kW or even a smaller wind turbine could easily be a self-sufficient energy source for an average sized household in Finland in a house with no electric heating. Two 4 kW wind turbines accompanied by a fireplace, which many of the houses in Finland have, could offer self-sufficiency in energy. Unfortunately this is only possible in theory, in the real life the fact that wind is intermittent results in the fact that the energy should be stored for times with the low wind speed. The technology available for storing the energy is not yet capable of fulfilling the energy needs of a house in Finland.

Next, there is a calculation for the payback time of wind turbines, when the capital investment on two 4 kW wind turbines is approximately 25.000 € including the installation:

(Total annual consumption) 32.000 kWh x 7,0 snt/kWh (price of electricity in Finland according to Energy Market Authority, 2008) = 2.240 €/ year (annual costs of electricity).

(Capital investment of two 4 kWh wind turbines) 25.000 euros divided by 2.240 e (annual electricity costs) adds up to a payback period of 11,1 years. Since the

wind turbines offer a lifespan of 15-25 years and minimal maintenance costs, one household could save approximately 10.000 € during the five years following the payback time.

The aim of this research is to provide the small-scale wind turbine producers valuable information about the Indian markets. The research is conducted as a case study using the MyPower 2 kW and 4 kW wind turbines manufactured by MyPower Finland Ltd. MyPower Finland Ltd is a company located in Helsinki, Finland. The company was earlier Pem-Energy Ltd and in September 2009, after changes in the ownership, it continued with a new name MyPower Finland Ltd. Originally the company was founded in 1998 and it started with developing, manufacturing and marketing of fuel cells which produce electricity and heat from hydrogen. MyPower fuel cells are also an environmentally friendly source of energy and later the company has concentrated on MyPower small-scale wind turbines. The products have been originally developed in a research project in Lappeenranta University of Technology and MyPower rose to the occasion when the new technology needed to be commercialized. The case company has already made an effort in creating a marketing strategy and a concept for the products for the European markets.

There are several reasons for choosing India as the target market. Additionally to the earlier mentioned huge market potential in energy overall, the researcher found out during the previous study that there is an exceptional amount of small and medium sized businesses in India. These SME companies are potential buyers of the small-scale wind turbines. Offering these SME companies in the urban areas of India, a secured and easy to use, own energy source seems a business with strong potential. (Akhter et al, 2008) Solely in Mumbai area there were over 170.000 SME sized companies in the year 2003. (MSME institute, 2009) The definition of a SME company in India (Government of India, 2006) is different from the European Communities definition (European Communities, 2006), in this research the researcher is referring to the European definition, using it as the

measurement, since it is less complicated to evaluate without collecting detailed information about the companies.

Table 1. Definition of SME companies in India.

Type of Enterprises	Investment in plant and machinery (transferred to euros with currency rate 0,61)	
	Service	Manufacturing
Micro Enterprises	up to ≈ 163.934 €	up to ≈ 409.836 €
Small Enterprises	above ≈ 163.934 € and up to ≈ 3 million €	above ≈ 409.836 € and up to ≈ 8 million €
Medium Enterprises	above ≈ 3 .million € and up to ≈ 8 million €	above ≈ 8 million € and up to ≈ 16 million €

Table 2. Definition of SME companies in Europe.

Type of Enterprises	Amount of Personnel	Turnover	Total amount in the balance sheet
Micro Enterprises	< 10	< 2 million €	< 2 million €
Small Enterprises	≤ 50	≤ 10 million €	≤ 10 million €
Medium Enterprises	≤ 250	≤ 50 million €	≤ 43 million €

One more reason why India is an attractive target for the research is the fact that the economical recession hasn't yet turned down the growth and expectations in India. India among a couple other countries in Asia are mentioned to be the spots of light in the world economy today. (Lindström & Vuori, 2008) India's economy is said to be well feeding itself from inside with the huge national consumption and it has yet suffered very little from the global recession.

To summarize the importance of this research in general, the researcher claims that it discusses a very current topic of the need for internationalization of Finnish

technology companies, especially in the environmental technologies. The new high-tech products need markets of scale, which Finland alone seldom can offer. The research deals with the challenges the companies' meet in concepting and branding their products and the processes they need in order to meet the demands and needs of the global markets. The topic of focusing on the emerging markets in India and selling renewable energy source is also linked with environmental issues like global warming, economical recession and predicted energy crises which will inevitably follow the present way of using the conventional energy resources. And since a great deal of the projected growth in energy demand in the world is expected to occur in the emerging Asia, especially in China and India, finding responsible ways and technologies to supply the needs of the growing markets in Asia is actually critical to the well-being of the whole world. Particularly to the case company, the value of this research is to evaluate the marketing strategy options and to provide clear guidelines how to proceed in this new, potential market area.

1.2 Research objectives, questions and limitations

The primary objective is to establish the feasibility of the small-scale wind turbines in the markets and to create a marketing strategy for the case company to enter the markets in India with their products.

If the chosen marketing strategy can be applied without high investment needed in India, the case company will benefit from a quick way to enter the markets and building their company image while they continue the search for partners for starting production in India. This retail of the small-scale turbines could work as a way to finance the growth and expansion of the company.

The main research question:

1. What kind of marketing strategy does the case company need for selling their small-scale wind turbines for SME businesses in the urban sites in India?

Empirical research questions:

1. What are the case company's strengths and weaknesses in internationalization?
2. What kind of competition is there in the Indian market?
3. What regulations and laws are there concerning wind energy that might influence the marketing of the small-scale wind turbines?
4. How can the Indian SME businesses as a target group be segmented?
5. What is the criteria for purchasing and choosing a specific energy form in SME companies?
6. How well does the case company's product meet the market's needs?
7. What would be the best pricing strategy for those segments in the Indian markets?
8. What kind of strategy does the company need for sales and distribution in India?
9. What are the best communication channels to approach those target segments?

Theoretical research questions:

1. What is included in the marketing strategy process?
2. How the marketing strategy should be created?
3. What are the principles for a market segmentation?
4. What is included in a positioning strategy?
5. Why is a marketing strategy important to the company?

The research will be limited by choosing a specific region in India, the metropolitan area of Mumbai with a population of 19 million. This area was chosen in cooperation with the case company after evaluating the potential it is offering in purchasing power, possible target group companies and the potential environment for wind energy production. India is such a large country that it would be impossible to do the research in the whole of India during this limited time. There are cultural- and climate differences within India and the results of

research done in Mumbai area are not necessarily applicable in the other parts of India.

The case company and its products will give a reality factor to the research. The research concentrates only on small-scale wind turbines and not in wind energy generally. This research is using the definition of small-scale turbines as turbines with production capacity maximum 20 kW. The research will also target only small and medium sized companies because they are seen as the most potential target group and because of the scale and the accessibility. This research will not address the residential or industrial use of the wind energy.

The small-scale wind energy has not done a thorough breakthrough to markets because of the limitations and shortages of the technology so far and that is one fact limiting the amount of information and research done previously. (Haq, 2008) There is not much previous facts and knowledge about markets of small-scale wind energy in urban areas.

Since the research is done with qualitative methods and most of the data is collected by observing the markets and through personal interviews, the data will be more or less subjective.

1.3 Theoretical framework

The theoretical framework of this research is based on the theories of a marketing strategy. The marketing strategy is a part of the corporate strategy and the overall business strategic planning process. A corporate strategy and the importance of a strategic management has been emphasized already since 1970. A strategy means having a longer time span plan, usually three to five years and for smaller companies two years strategic plan. (The Finnish National Board of Education, 2009) Strategy is based on the mission, the constant values, the vision and strategic objectives of the company. A clear mission statement is crucial for establishing objectives and formulating strategies.

This study is focused on the marketing strategy, but the overall strategy of the corporation is the base for the marketing strategy.

Peter Drucker has set the guidelines for the mission statements already in the mid 1970s, and he suggests that the companies should ask themselves the question: What is our business? The question would be synonymous with asking the question, What is our mission?(David F. 2001) This study will not discuss in more detail the corporate strategy but concentrates on one part of it, the marketing strategy. The corporate strategy and the strategic management can be divided into divisions: Marketing, Finance, Accounting, R&D and Computer Information Systems. (David F., 2001).

When examining the marketing strategy alone, it can be seen as an integration of the company's goals and the operations to meet the customer's needs. The marketing strategy is therefore like a carefully planned roadmap to the best possible combination of the different functions in the company to serve the customer's needs as effectively and profitably as possible.

One of the best known theories in marketing is the marketing mix, also known as the four P's of marketing. The marketing mix concept was originally developed by Neil H. Borden in 1965 (Netmba, 2009). Today the most commonly used marketing mix consists of evaluating the product, price, place (distribution) and promotion against the constraints from target market (Netmba, 2009). According to Cravens and Piercy the marketing strategy process consists of the analysis, strategy development and implementation activities. These activities needed include developing a vision of the markets that the company is interested in and then choosing the market target strategies. The company needs to set goals and positioning strategies which include positioning of the product, price, place and promotion strategies to meet the value requirements of the customers. (Cravens and Piercy, 2006)

When choosing the market target strategies one should take into consideration the segmentation of the market, the same marketing mix might not work for all target segments (Netmba, 2009).

Strategic thinking in marketing has been studied from different perspectives; one interesting study is by Michael E. McGrath who talks about core strategic vision, CSV. According to McGrath, CSV answers three questions: Where do we want to

go? How will we get there? Why do we think we will be successful? (McGrath, 2001)

It appears that the importance of the two core issues in the strategic marketing can be pointed out: Planning before doing and differentiation of the product. As Philip Kotler says: “The art of marketing is largely brand building. If not a brand, it will be viewed as a commodity (Hammond, 2008)”

This research will create a marketing strategy for the case company using a process that includes situation analysis and then the segmentation of the markets and after that positioning of the product by using the marketing mix concept. The goal where the strategy is aiming answers the question: “Where do we want to go?” It is partly given by the case company and partly decisions made based on the information gathered through this research. After the strategic goal is set, the ways to reach the goals answers the next question: “How will we get there?” This is the tactical part of the marketing strategy: Positioning the product, price, place and promotion to serve the target market and the objectives. one could argue that the marketing strategy as a whole is the story line behind the reason why would the case company and its products become successful - answering the last question: “Why do we think we will be successful?” The main objective of the marketing strategy is to find, create, support and implement a competitive edge for the company.

1.4 Research approach, methodologies and empirical study

The research approach is a case study with qualitative methods. The choice between the main approaches is quite clear in this thesis, since the research questions are mainly aimed for understanding the process and decisions behind the potential customer. The research is a single case study, based on the fact that the case company and its product define the study. With a multi-method case study the researcher was able to design the research to answer the questions by using in-depth interviews with semi-structured questionnaires allowing some flexibility to discuss issues that might come up in the discussion unexpectedly but which can in the end turn out to be very significant. The qualitative methods allow

the observation of cultural differences and consideration of the meaning of them in an interview and when analyzing the findings. Even though, the main data type will be qualitative, it is possible to measure some basic differences through quantitative methods while using semi-structured questionnaires. For example, there might be a clear pattern in the possible differences between a position in the company or the background/education of the interviewees correlating with their answers. Since this is also only to be verified during or after the research, it also points out to an ethnographic approach, unstructured and data-led.

The researcher has conducted a further analysis of the master students group study from the fall 2008, and also other previous studies done of small-scale wind energy. (Akhter et al, 2008) The researcher has also studied additional academic literature and relevant articles about marketing strategies, wind energy and the Indian markets using also internet sources for more recent studies and knowledge of wind energy markets to understand the present situation in India and the characteristics in wind energy as an industry.

The first phase of the study was a desk study including interviews with the case company. The most important objectives in the first phase were:

- To learn about the industry and competition in India.
- To study the macro-economics including laws and regulations in India concerning the wind energy and most of all relating to the marketing of small-scale wind turbines in the urban areas as much as it can be done through secondary research.
- To study the case company and its products through interviews and observation.

After the first phase, the study continued with a field study in India. The researcher prepared questions for semi-structured interviews. The empirical research material was gathered in India during May/June 2009. The interviews consisted of representatives of the potential small and medium sized companies in order to evaluate their needs and expectations when choosing energy sources and buying the equipment. The objectives of the interviews were to find answers to

the buying process of energy supplies, the costs and pricing expectations and to establish the possible need and interest of the SME companies.

The potential customer companies approached by the interviews, were selected after a first segmentation done based on the secondary research. The segmentation is explained in detail in the empirical part of this thesis. The segments represent different industries and different sized companies from the target area.

In order to complete the macro economics study and to establish an understanding of the environment and regulations concerning the marketing of small-scale wind turbines in Mumbai, the researcher also tried to meet local officials and other stakeholders, like the private energy companies in Mumbai, for interviews about these issues.

1.5 Case company

The case company is MyPower Finland Ltd which took over Pem-Energy Ltd's intellectual property and brand in September 2009. They have a head office in Helsinki, Finland. The researcher has had an opportunity to interview the CEO Mikael Seppälä, technical advisor Olli Näremaa and marketing manager Pasi Leppänen about the company and the products. She has also worked in closer cooperation with them after the field study in India even participating in the company's business interactions and negotiations giving her a chance to observe their working methods more closely. More detailed analysis of the company is included in the empirical part in chapter four of this thesis.

1.6 Structure of the research

The structure of this research will be following the phases of the study. The first chapter is the introduction and in the second chapter, there is a discussion of the theoretical background of the studies. The theoretical framework of this thesis rests on developing the marketing strategy. It is presented in a chronological order

in the same way the marketing strategy develops in a company starting with situational analysis, then segmentation of the markets, positioning the product with the marketing mix and finally analyzing and recommending a new marketing strategy.

In the third chapter, there will be a description of the research approach chosen and the methods that were used for analyzing and reporting the data. The fourth chapter will include the empirical part of the studies starting with a study of the situation of the case company, its products and the target market. After the situational analysis, there will be the content and the findings of the field study. This phase, empirical field study took place in Mumbai aiming to find information from potential customers in order to position the products into the Indian markets. The empirical study was aiming at revealing the processes of buying and choosing energy sources in SME companies, more specifically their needs, value criteria, purchasing power and expectations. The fourth chapter also includes the recommended business model and marketing strategy for the case company. The information from customers together with the previous data from the situation analysis will be the building blocks of the marketing strategy. In other words the study will combine the secondary and the primary studies and an evaluation and analysis of that data and develop a marketing strategy, which will then work as a guideline and compass for the case company to enter the markets in India. The last, fifth chapter, will be the conclusions and recommendations for further study.

2 THEORETICAL FRAMEWORK OF MARKETING STRATEGY

This research is set out to study the markets in Mumbai and the possibilities in that market for the urban small-scale wind turbines. Finding out how to determine the marketing strategy to enter the markets and more precisely, how to pursue the business to business segment chosen, is the goal of this research. In this chapter, there is first shortly the whole theoretical background and discussions and then the theories that were chosen in the research in more detail.

Word strategy has been defined in the history mainly by military terminology and it is derived from the Greek word *strategos* which stands for "the art of the general". In the military use the strategy was defined as a theory of the use of combat for reaching the objectives of the war and a strategy was said to give the aim to the whole military action. (Aaby N-E. and McGann A., 1989) Now-a-days the strategy is adapted to business use and one of the definitions describing it goes as follows:

Strategy is the pattern or plan that integrates an organization's major goals, policies and action sequences into a cohesive whole. A well-formulated strategy helps to marshal and allocate an organization's resources into a unique and viable posture based on its relative internal competencies and shortcomings, anticipated changes in the environment, and contingent moves by intelligent opponents. (Quinn J.B., Mintzberg H. and James R.M. 1988)

In the business world, the strategic thinking and importance of strategies started getting appreciated in the 1970s. A Chinese warlord, Sun Tzu, has said that primary strategic ability in war is to avoid war. Supporting this kind of thinking, there is a quite recent theory of the Blue ocean strategy by Kim and Mauborgne (2005), where they state, that the key is to avoid bloody competition and to find "a blue ocean" meaning making a business and market decisions which make the competition irrelevant. (Kamensky, 2008) (Kim & Mauborgne, 2005) Strategic

planning is done on several levels depending on the size of the company: the corporate level which guides the whole enterprise, division level, business unit level and product level. In large corporations, there is a marketing plan for each product and the strategic and tactical planning is done in the product level.

(Kotler, 2003) The strategic planning process has been described by many authors and with quite small differences among them. The next figure demonstrating the strategic-planning process by Blythe & Zimmerman (2005) is one example. In the marketing strategy chapter later in this thesis, the researcher has created a graph explaining the marketing strategy planning process used in this study. It is combining parts of graphs by Kamensky's company's strategic architecture, and Kotler's business strategic-planning process. Kotler's graph is very clear and straightforward but since it is missing the link to corporate goals and values, it will be combined with Kamensky's graph. (The original graphics by Kotler and Kamensky are as appendices 1 and 2 of this research.)

Marketing strategy is one part of a corporate strategy and should always have the link to the company's values, mission and vision. Marketing strategy is claimed not to have reached an important position as part of the corporate strategy, because it has not been linked closely to the mission, goals and objectives of the corporation. (Aaby & McGann, 1989).

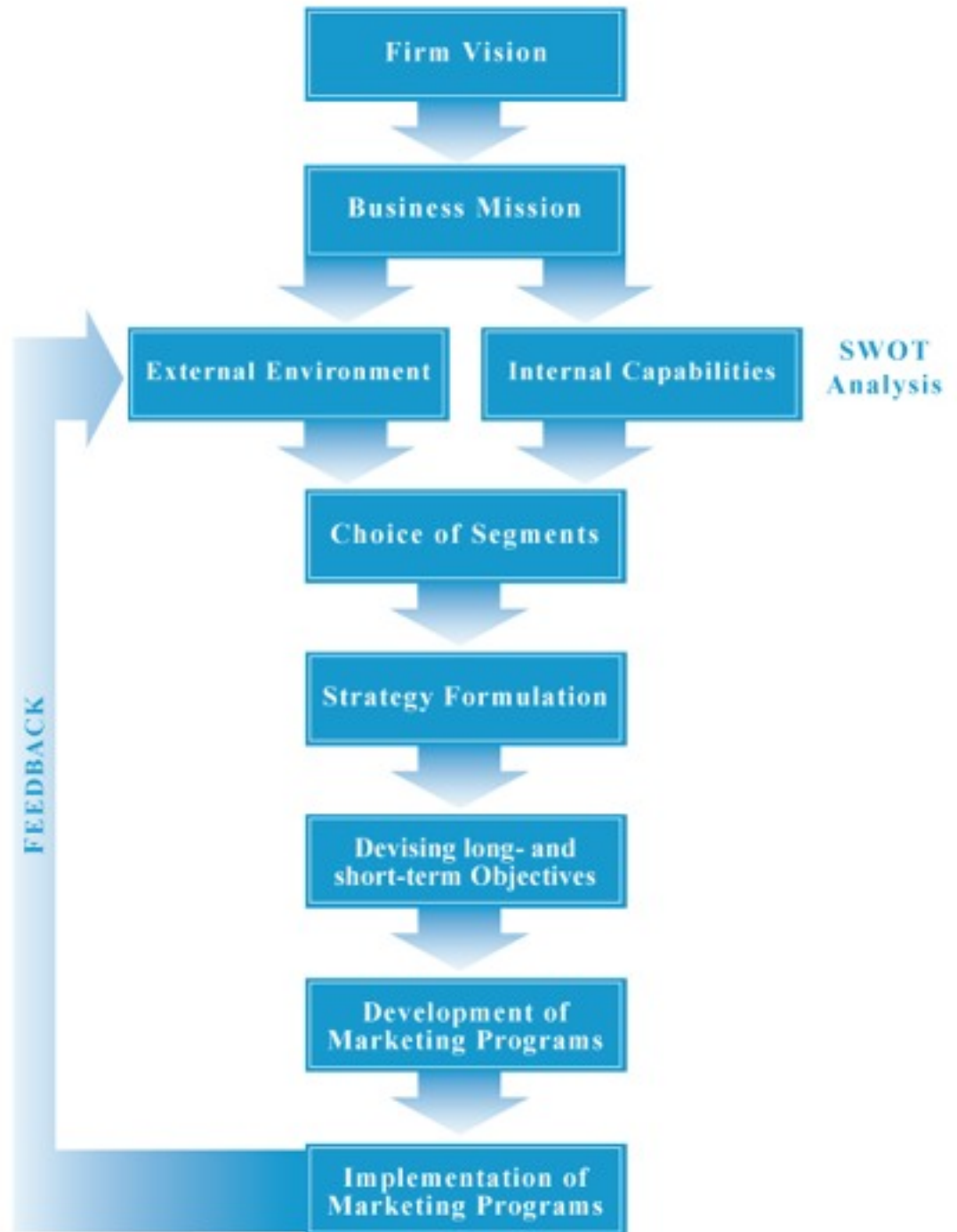


Figure 1. Strategic planning process (Blythe & Zimmerman 2005)

Marketing strategy is divided into six categories by Greenley:

- 1.) Marketing-mix based strategies
- 2.) Product life-cycle based strategies
- 3.) Markets share based strategies
- 4.) Positioning based strategies
- 5.) International based strategies
- 6.) Industrial based strategies. (Greenley, G.E., 1984)

From a theoretical point of view the foundation of this research is the marketing mix on which the theory of marketing is said to be based. (BPP Publishing, 2000) Marketing mix concept, also known as the four P's of marketing, was originally developed by Professor Neil H. Borden in 1965.(BPP Publishing, 2000) The original four P's marketing mix consists of evaluating the product, price, place (distribution) and promotion against the constraints from the target market. Today, there are also additional P's which have been suggested by different authors to be included in the marketing mix. These additional P's are people, processes and physical evidence. The marketing mix is in a way considering all the forces affecting the success or failure of a product in the markets and making decisions based on that information in order to succeed. The way Kotler and Armstrong present the forces or the core concepts in marketing opens the picture. Here is listed the core concepts, which are all linked to each other and add on to one and another:

- Needs, wants, and demands
- Marketing offers (products, services and experiences)
- Values and satisfaction
- Exchange, transactions and relationships
- Markets itself.

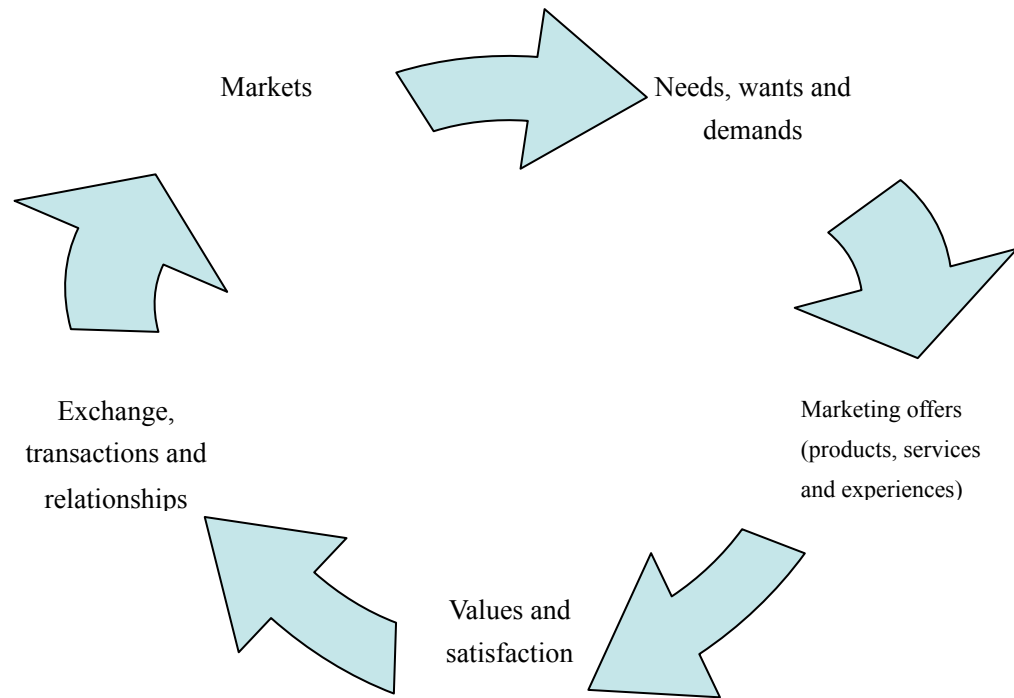


Figure 2. Core marketing concepts (Kotler & Armstrong, 2004)

The marketing strategy should always be linked with the corporate overall strategic plans. In smaller companies the portion of marketing of the whole strategy is much bigger than in large corporations. The marketing strategy process, just like the corporate strategy process, consists of a situational analysis, strategy development, and implementation activities. The activities needed include developing a vision of the markets that the company is interested in and after that choosing market target strategies. The company needs to set goals and positioning strategies which include positioning the product, price, place and promotion strategies to meet the value requirements of the customers. (Cravens & Piercy, 2006)

Choosing market target strategies takes into consideration the segmentation of the market, the same marketing mix might not work with all target segments. (NetMBA, 2009) In this research the target is already limited by choosing the small and medium sized businesses as a main target, leaving out consumer segments, like private households and also big industrial customers. Even though

the target is limited it still needs additional segmentation and consideration of the possible differences between the defined segments and their needs.

This research uses approach that would answer three core questions in strategic marketing: Where do we want to go? How will we get there? Why do we think we will be successful? (McGrath, 2001) These questions are answered in this research by following steps:

1. Situation analysis, including the analysis of the target market and competition in relation to the case company, its objectives, resources and products. Different analyzing tools and methods used in this research: PESTEL analysis, Porter's Five Forces analysis, Competitor analysis and SWOT analysis.
2. Segmentation of the markets of SME companies in Mumbai.
3. Evaluating the marketing mix, including the strategy for product, price, place, promotion, people, processes and physical evidence.
4. Analyzing and concluding the collected data from the previous steps and defining the marketing strategy for the case company.

As a foundation of the research and for these four steps, the research has to take into consideration the marketing strategy process as a whole and the statement of objectives of the case company in order to be able to analyze and determine whether the strategy is in line with the strategic objectives set by the company and the researcher.

2.1 Marketing strategy

First, the researcher will discuss the marketing strategy as a process. Marketing strategy is based on the statement of objectives, which in this case will be set by the case company. There might be a situation where the researcher herself wants to add or deduct something to those objectives according to the experience or know-how of the market and the industry. It shouldn't, in anyway, compromise the values nor the objectives of the case company neither the objectives of this research. The objectives should always have a link to the company's or the organization's vision and mission statement. The company should define its

mission by answering the fundamental questions that became known by Levitt already half century ago: What business are we in? What business do we want to be in? (Levitt, 1960) or another version by Peter Drucker in the mid 1970s: What is our business? This question being synonymous with asking the question, What is our mission? (David F. 2001) Understanding of the mission is crucial for making the right strategic decisions. In the small-scale wind energy business, the core business is different when comparing, for example, the markets in Finland and India. In generally, the core business is to sell energy or a solution for energy production. In the markets of India, it is important to understand that a wind turbine could most likely solve customers problems with power cuts in the main grid while in Finland this is hardly a problem and wind energy has to offer also cost efficiency and/or environmental benefits.

Developing of the marketing strategy starts with establishing the vision and mission. After establishing the objectives, it is possible to conduct a situation analysis about the case company, by using SWOT analysis, competitors and the markets in general (micro and macro environment analysis, PESTEL), to consider the marketing mix possibilities and to develop a marketing strategy based on the data collected through these phases.

Although, these theories create the foundation of the marketing strategy, the researcher still argues that marketing always also includes a non-scientific part which is the story behind the product and/or the company. Success in marketing is hard to forecast mathematically before the process because it always includes partly random and unexpected factors which appear in the context of the changing environment and changes in the customers' behavior and values. The greatest success stories in marketing usually are very well based on the foundation of strategic thinking and planning but do not forget the importance of creating a story for the product, a story which the customer can relate to and connect with.

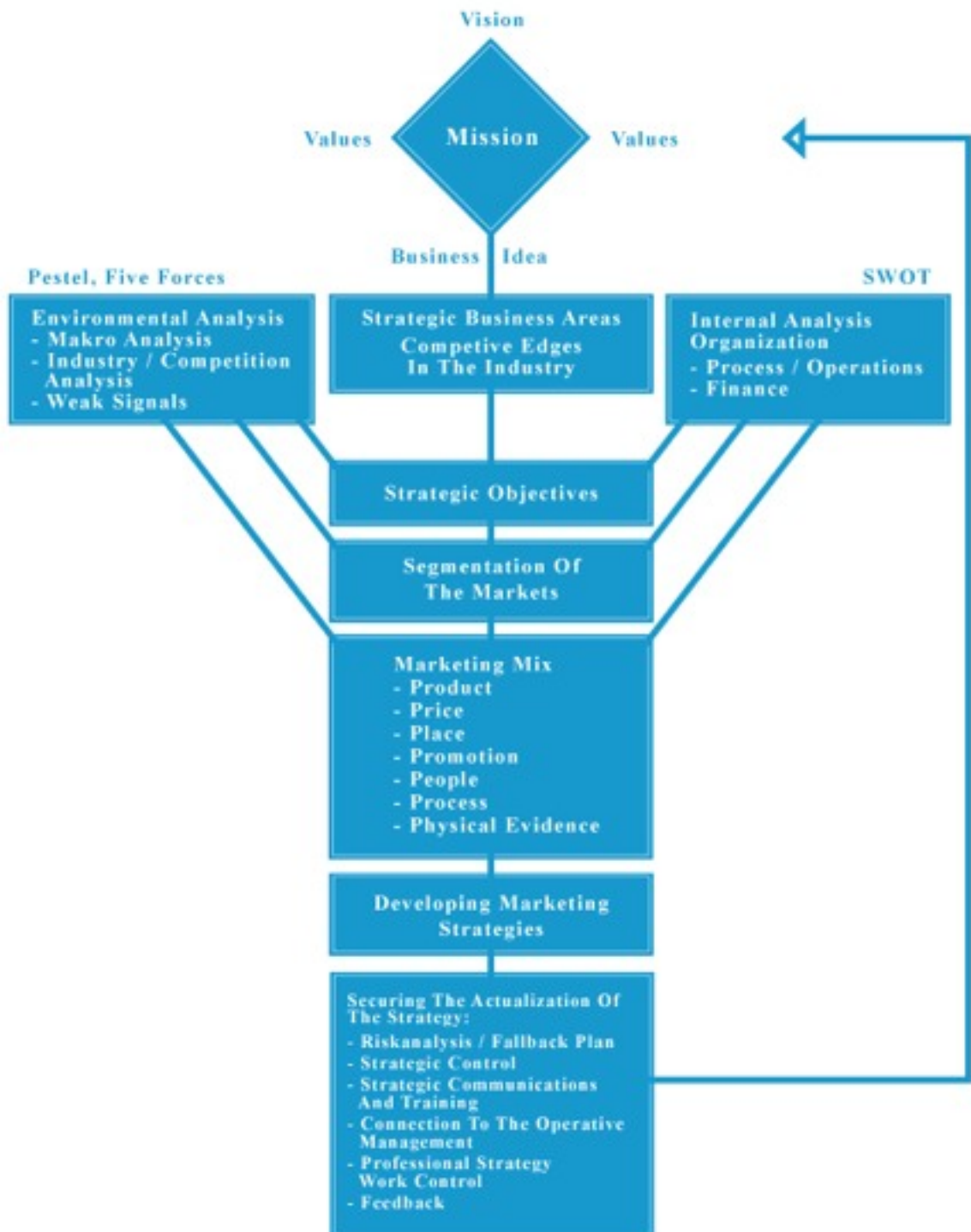


Figure 3. Marketing Strategic-Planning process after Kamensky & Kotler
(Original graphs of Kamensky and Kotler are as appendices 1 and 2 of this study)

2.2 Statement of objectives

The company should always have objectives guiding the strategic decisions. Objectives are important for any organization's success, they state the direction, are necessary to evaluate results, create synergy, emphasize priorities, sharpen coordination and provide the grounds for effective planning, organizing, motivating and controlling of activities. (David F., 2001) In project management the objectives are determined by the SMART rule: Specific, measurable, achievable, realistic and time-framed. (Maylor & Blackmoon, 2005) These definitions also work for other objectives such as the objectives guiding the marketing strategy.

SMART stands for:

Specific - You should be able to specify what you want to achieve.

Measurable - You should be able to measure how well the company is meeting the objectives.

Achievable - Ask yourself are the objectives truly achievable - is it physically possible?

Realistic - Do you have the resources to achieve the objectives?

Time-framed - Set up a time limit for accomplishing the objective. (Maylor & Blackmoon, 2005)

2.3 Situational analysis

The situational analysis consists of two parts: the analysis of the micro environment and macro environment. In order to make right decisions for the marketing mix and strategy, one must recognize all the key factors that may influence on the marketing of the company's products, internally and externally. Since this research is concentrating on entering a new market, the researcher will focus more on the analyzing of the industry of small-scale wind turbines, competition and the macro environment in the target market in India than benchmarking the company with possible domestic competition in Finland.

First of all the **micro environment** includes studying the case company itself: The organization culture, skills and resources in the company and the features and quality of its products. This can be done using for example SWOT – analysis (Humphrey, 1964) or marketing audit – analysis. In SWOT –analysis the company and/ or its products are analyzed by considering the strengths, weaknesses, opportunities and threats. In SWOT -analysis the strengths and weaknesses analyze the internal issues inside the company and opportunities and threats on the other hand the external issues.



Figure 4. The micro environment (BPP Publishing limited, 2000)

Marketing audit is another method used to analyze the company's internal micro environment, it is systematic analysis and evaluation of the organization's marketing position and performance. (BPP Publishing limited, 2000) Micro environment also includes the suppliers, competitors, interest groups, consumers and distributors. Porter's Five Forces analysis identifies the keys to competitiveness in a particular industry. (BPP Publishing limited, 2000) The Five Forces considers the rivalry among existing companies, the threat of market entry

(possible future competition), the threat of substitutes, bargaining power of suppliers and finally bargaining power of buyers.

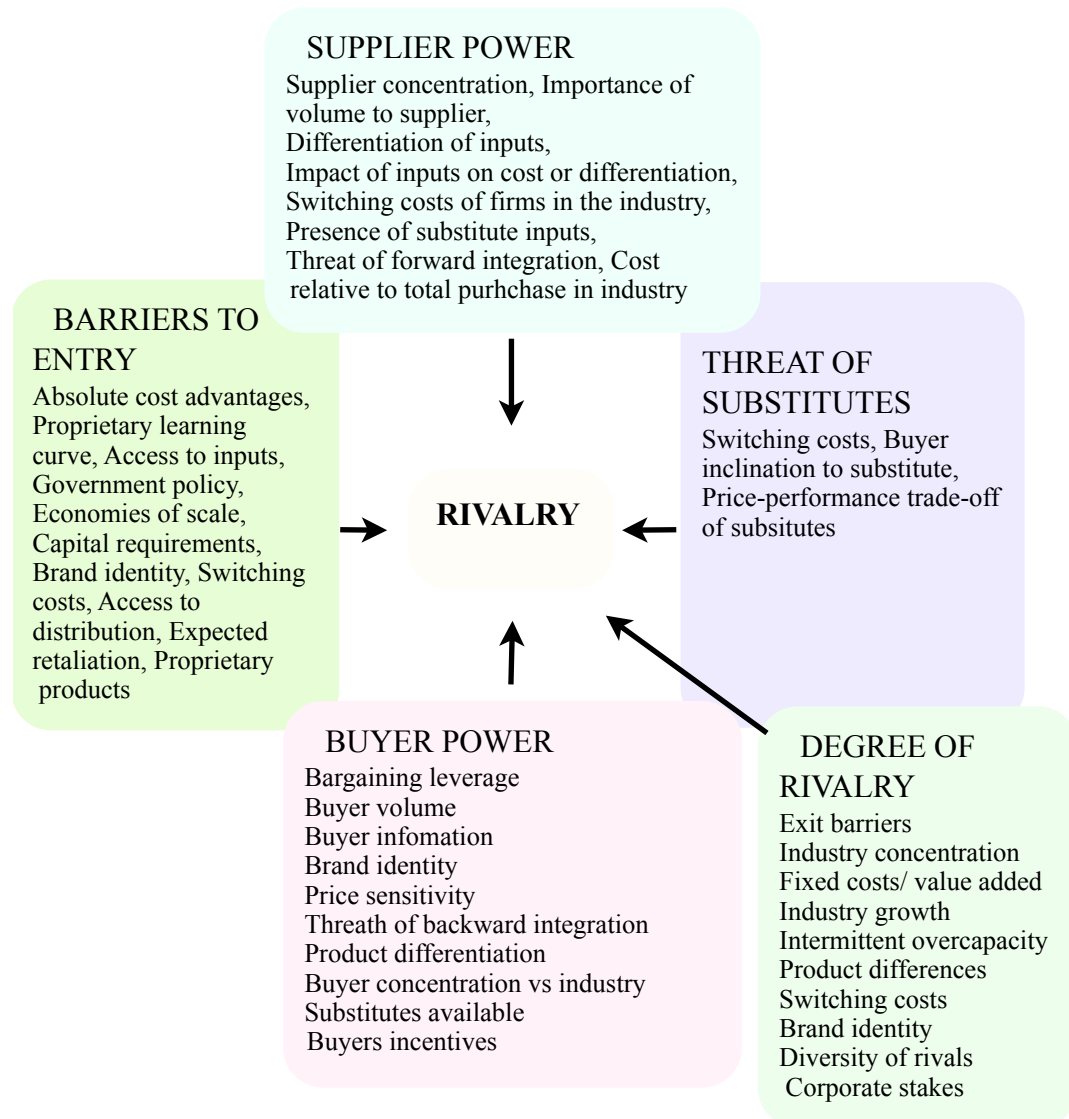


Figure 5. Porter's Five Forces - a model for industry analysis (Source www.quickmba.com)

The **macro environment** includes factors like political and legal, economic, social and cultural, and technological. One strategic tool to analyze the macro environment is PEST or the improved PESTEL model. PESTEL analysis can be conducted only regarding the domestic environment or including activities abroad.

The political and legal issues concern, for example, evaluating the risks in the market area; how stable is the political situation, degree of the corruption in the country, the laws concerning foreign direct investments and other commercial laws. What kind of political system does the country have and what kind of relations and agreements with other countries. The economical environment analysis include going through key figures like the rate of the growth and inflation, interest rates, taxation levels and the level of unemployment in the country. The social and cultural factors include understanding the norms and values of the target country/market area. It is important to understand not only the demography of the country but also the social influences inside the society. The cultural factors include many layers: the national culture, business culture, organizational culture and the culture of individual behavior. (Lee & Carter 2009) The last factor of the original PEST is technological. The technological factors can be the most challenging to evaluate due to the rapid development. The technological factors can be evaluated by impact of technology to an industry, possible effects of technological change and by trying to evaluate the possibilities that technology can provide for the industry, for example, new communication methods via internet.

In the modern marketing environment, the role of technology is growing fast, the impact of internet and e-commerce are opening new doors but at the same time making things more complicated and highly competitive in some industries. In addition to the technological development, people are more and more concerned with the ethics and values of the companies and their products. The green movement has an impact on many industries already, and people are getting interested in how the corporations take care of recycling or how much the production of a certain product has used energy and what kind of energy. (BPP Publishing limited, 2000) The improved model PESTEL includes also environmental factors and legal factors as separate part of the analysis. Legal factors were already discussed earlier but environmental is the real addition to the former PEST analysis and it concerns factors like weather and climate change. (Oxford University Press, 2007)

2.4 Market segmentation

After the situational analysis the research defines the market segments inside a target group of SME companies in Mumbai. The understanding of market segmentation started in 1956 when Smith developed the product differentiation strategies and the market segmentation. Both of these theories discuss the fact that products themselves or marketing and promoting the products should be adjusted according to the requirements of different customers and their different needs and criteria how they value the products. (Hooley et al, 2008) Definition of a market segment is that it consists of a group of customers whose needs and wants are not identical but similar to each other. (Kotler, 2003)

The researcher will consider the need for segmentation and the advantages and disadvantages. Very close to the market segmentation concept is the concept of competitive positioning; they both are linked by customer's needs only changing the perspective from the company concerned in meeting the customer's needs (segmentation) to the concern of how customers perceive the product or supplier and how they are meeting the customer's needs (positioning). (Hooley, Piercy & Nicolaud, 2008) With personal experience from automobile industry, the researcher knows that marketing people in that industry have already over a decade realized that the differentiation of products is no longer a rivalry between the engineers but the designers and marketing people. It takes a very sophisticated consumer to actually recognize the difference between engine profiles and the technical platforms of cars from different automobile companies. Instead of competing in that field, they have started cooperating more and more in the development of basic elements for the cars and starting differentiation in the levels of design and accessories to serve a very carefully targeted customer segment. The marketing people define very clearly and into detail which is the target group and then the product is finalized with the qualities and equipment expected to be valued by that group. On the other hand, Mercedes Benz has made a clear competitive positioning with the pricing strategy it is using. It does not necessarily offer more valuable engine or equipment compared to some of its competitor brands in the same car category, but the consistent pricing strategy

makes sure that Mercedes Benz offers the customer prestige and status value since it is world wide know with higher pricing from the less prestige car brands.

In the overall consideration of segmentation, the company also has to evaluate whether it has resources to fulfill the differentiation of the product or marketing strategy according to the different segments and whether the work done for segmentation and differentiation is compensated by an increase in profits. For example if the market is quite homogenous or the company is targeting global markets, it might be more reasonable to start with one strategy for all segments and gradually start offering differentiation for the most profitable market segments. (Hooley, Piercy & Nicoulaud, 2008)

The new technologies available and the growing demand from customers to be treated as individuals has lead to a 'micro-segmentation' and even to one-to-one marketing, where each customer is treated as a different segment. (Hooley, Piercy & Nicoulaud, 2008) Companies create a key customer softwares and processes in order to follow the behavior of the customers and to be able to meet them in more individual level. For example, the marketing letters are modified according to the information collected of the customer's purchases etc. Many companies also try to create and keep up an interactive conversation with the customers for example by offering key customers a platform in the company's website, where the customer can express needs, hopes and get detailed information about products and novelties before they even get to the markets. Some companies utilize these customer platforms for open innovation, letting the customers to create their 'ideal product' or their own version of an advertisement of certain product. The more information the company gets about its customers, the easier it is to adapt the product, services and marketing to answer the customer's needs. Next we can concentrate on the segmentation of the business markets which is the chosen segment of this research. In business markets the one-to-one relationship between supplier and customer is not so rare and difficult to achieve, it is in some cases the only way to do business.

2.4.1 Segmenting business markets

The business markets can be segmented by three main characteristics:

- Background company characteristics
- attitudinal characteristics
- behavioral characteristics.

The segmentation structure in the business markets is not as well developed as in the consumer markets – probably because in B2B the relationship between the supplier and the customer is generally closer to begin with. The segmentation structure used in this research is developed by Shapiro and Bonoma (1990). In their model, the background company characteristics include demographic factors such as the industry type, customer size and location, technology and capabilities of the customer and the purchasing organization. The second main characteristics are attitudinal characteristics which segments the customers by the basis of the benefits being sought by the purchasers. And the last main characteristics are behavioral issues which include issues such as buyer's personal characteristics and product/brand status and volume. (Hooley, Piercy & Nicoulaud, 2008)

Background company characteristic are useful and the most commonly used segmentation criteria for the business markets. The customers can be segmented by the industry type and according to the different needs. For example, we can generalize and say that all SME companies need energy, but we can segment the companies and the different industries by the amount of energy that they are estimated to use and that way prioritize the companies by segments. The size of a company is also highly significant when considering the amount of energy they need. The size of the company also affects on the purchasing power, methods and processes of purchasing. Larger companies have more often specialized buyers or a department for buying and they demand different kind of information and control over the purchasing. Other important characteristics that can be used in segmentation of the customers are location, state of a technology development and the purchasing organization and its policies. (Hooley, Piercy & Nicoulaud, 2008)

The business markets can be segmented based on the benefits being sought by the purchasers, these are called **attitudinal characteristics**. It is important to understand what kind of decision-making unit the customer has and how are the different individuals influencing inside that unit. For example in a construction company instead of a single purchaser, there might be a group of managers deciding on bigger purchasing issues together. When the group is choosing, for example, between different options of energy source for a new building site, the architect probably has totally different kind of criteria compared to the purchasing manager, who has a tight overall budget to watch over for. The architect might value the aesthetic and original solutions, which would enhance his creative plan and the purchasing manager perhaps looks for cost savings and low maintenance needs from the solution. Further more the sales manager might insist on an environmentally friendly solution, knowing that it is a valuable criteria for the end-users they are targeting. As a conclusion many companies emphasize on selling different benefits instead of features of the product. This is also the reason why different departments of a same customer company might need their individual marketing letter – to address the benefits important to each different segment. (Hooley et al, 2008)

Even in the business markets, one should not forget that though the buyer is a company, the decisions are always made by human beings. The company policies and needs ultimately guide the purchasers work but especially in competitive markets, where the purchaser has several good options from which to choose, the personal characteristics and motivations influence the final decision. The business markets can therefore be segmented by the similarity of buyer-seller, the motivation of the buyer and the risk perceptions of the buyer, these characteristics are called **behavioral**.

The more similarities the buyer company shares with the seller company, the easier their cooperation usually is. For example, a small business might not get the best possible service from the largest and well established accounting company available because it will not be a key customer for the large scale accounting company. A medium sized accounting company on the other hand might see the

small businesses' possibilities to grow and become their reference of a well counseled customer in the future. This is called a win-win situation.

The buyers personal motivation towards his/her job has a great influence on how dedicated the person is to shop around and take an effort in finding the best solution for the company. Also the level of experience of the buyer might have same kind of effect, they tend to rely on the long, existing contacts and relationships they have created and get unwilling to try new solutions.

One last behavioral characteristic of a buyer is the buyer's personal style and personality in regards of taking risks and tolerance for ambiguity. The status within the company or personal self-confidence level often determines how big risks the buyer is willing to take. (Hooley et al, 2008)

2.4.2 Choices of segmentation research

Segmentation research can be conducted by using different approaches: a priori segmentation approach or post-hoc-based segmentation approach. The biggest difference between these two is that in a priori segmentation one uses the existing and more easily determined characteristics of demographic and socio-economic data when the post-hoc segmentation does not rely on existing market structure but tries to establish an uncover naturally existing segments. So in other words, post-hoc segmentation doesn't believe that customers can be placed into a ready-made categories but the categories need to be found and defined in each case. (Hooley et al, 2008)

Although, the researcher believes that post-hoc segmentation can be very useful and profitable especially in consumer marketing and with customers who can afford to do it properly, the a priori segmentation approach is preferred in this research and then adjusted the segments based on the data from the empirical study. A priori segmentation can be done before the empirical study based on the secondary data and by doing that researcher was able to narrow down the potential customer segments and to include them as well represented in the interviews as possible. If, after the interviews or other part of the empirical study, something would come out that compromises the conclusions done based on the

secondary data, the researcher would then in the analysis part have to take that into consideration and adjust the marketing mix with that information. If the findings were significantly controversial with the segmentation done earlier, that might diminish the value of the interviews and would be pointed out in the recommendations of further research needs.

2.5 Marketing Mix

When the market segmentation is completed and the chosen market segments clearly stated and illustrated, it is possible to start evaluating best choice or mix of the marketing positioning strategies. The researcher will use the marketing mix concept and the most recent version which includes seven P's instead of the four original.

The importance or relevance of each P's in this case can be estimated by using the data available from the desk study about the markets and the industry but only after the empirical part, it is possible to decide the best combination and value of each factor. In example, we might believe based on the common knowledge that, in India, the environmental awareness is not yet deep enough to drive the purchasing decisions made in small businesses. On the other hand, there might be a certain segment, for example, managers of multinational companies operating in Mumbai that already share the values of developed countries and make decisions based on the environmental concerns rather than, for example, short-term cost savings. The theory only gives a foundation for considerations and the empirical data finally the answers how to use the parts of the theory and implement the marketing mix.

First P - Product

In this case the physical product is a small-scale wind turbine produced by MyPower Finland Ltd. The product always consists of the tangible and intangible attributes. The tangible attributes are availability and delivery (installation), performance, price and design, and of the intangible attributes are image and the perceived value of the product. The case company is marketing two different

sizes of turbines, 2 kW and 4 kW turbines and more importantly the output it offers for customers - electricity which is described with terms of nominal power (kW) and annual output (kWh). Other factors included in the product are, for example, the design of the turbine and green values/status it offers to its users.

When considering product as a factor in the marketing mix, it is relevant to benchmark the product against the competitors. We can evaluate the different parts of a product by the Hollensen (1998) model:

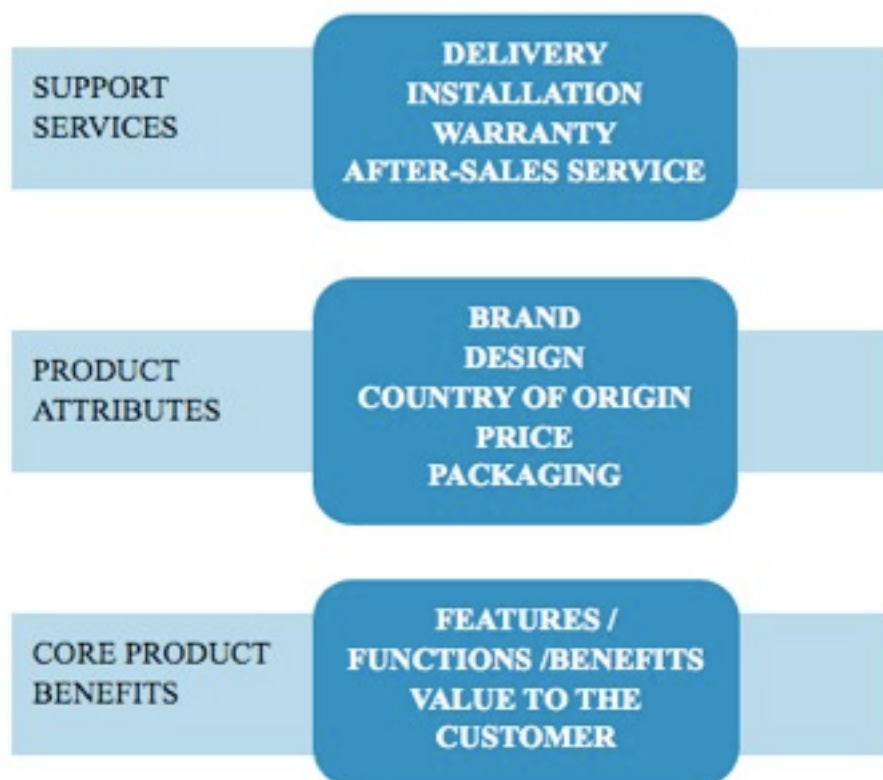


Figure 6. The total product adapted from Hollensen (1998), (Blythe & Zimmerman 2005)

When comparing to the competitors and after analyzing the value criteria of the customers, one can establish the importance of each part of the product feature in the sales of the product. For example, in a new industry, like wind energy still is, the brand value probably is not such a meaningful factor when buying the

products. Although with the history of problems in the technology that wind turbines have had, some parts of the brand, for example, how it presents the country of origin can become relevant. The customers might have a better perception of products that come from Europe compared to the ones from Asian manufacturers. (Haq, 2008)

Durability is probably one main sales argument for wind turbines and their carefree technology and materials are important especially when competing with other forms of energy, ie solar energy.

In technical devices, the after sales service and its availability is often very important factor. The customer wants to be sure that there is help available if the device malfunctions. When we are dealing with quite new product and new markets the testing of the product is important. The quality and performance of the product needs to be tested in the actual surroundings in the target market or at least they have to have reliable research results and the possible differences between the environmental variables in the new markets pointed out. After sales service usually includes considering the guarantees given to the product.

Second P - Price

The pricing strategies usually follow the marketing objectives and the market itself. The company might have different objectives which influence the pricing or the market sets up demands for different pricing strategy than what is chosen generally. If a company with a controlled pricing strategy wants to enter a market which has a big credit risks and difficult political situation, the company might have to consider more radical pricing strategy to make sure they get a reasonable ROI. Different price setting strategies are:

- Market penetration strategy: Economies of scale, low unit costs and increased output.
- Market skimming strategy: Setting a high initial price for a product, works in markets where there is insufficient market capacity, buyers who are relatively insensitive to price increases and where high price can be seen as high quality.
- Early cash recovery strategy: Used when the business risks are high and can change rapidly.

- Premium pricing strategy: The product is given a uniqueness and luxury image with a high price.
- Economy pricing strategy: Keeping the costs and marketing at minimum, common with bulk products.
- Cost-plus pricing: Pricing method where one first calculates the costs of the product and then adds the wanted profit margin.

The prices can also be set differently according to the quantity of purchase, geographical location of the purchaser, market segment (different prices for students, pensioners) and even by time of purchasing (hotel prices according to season). (BPP Publishing limited, 2000)

Third P - Place

When discussing the place, it usually refers to channels of distribution in business to business marketing. The actual place / location can be very important in consumer marketing and in sales of bulk products like groceries, where the easy access to the shop is one of the most important factors when choosing a place to shop. In B 2 B marketing and especially in project sales the importance of the location of the sales office might not be so relevant, since the seller usually contacts the customer and the meetings can take place at the customer's premises. In this case the availability of the company's contact information increases its importance – availability and visibility of a company in the industry's fairs and the company's website.

Factors to consider with the place:

- Channels of distribution,
- intensity of coverage
- location
- stockholding
- freight / insurance. (BPP Publishing limited, 2000)

Fourth P - promotion

Promotion includes advertising, personal selling, merchandising and publicity of the company and its products. (BPP Publishing limited, 2000)

Promotion is an interesting aspect and can be evaluated in many ways. The need for promotion cannot be denied except in rare cases when the product or service has a monopoly situation and even then it has to be a product or service which demand can't be controlled ie increased by the actions of the supplier. This kind of product could be a drug for a fatal disease, the people suffering from the disease have no choice but to use the only drug available and if it is covered by patent or the production of it is not financially profitable, there is no real competition in the market. In most of the cases even a patent does not cover the possibility of threat of substitutes, future competition or consumers lack of interest for the product. Promotion is an overall activity that includes the external visibility of the product: Advertising, PR-work and the internal functions such as direct sales and service provided to the customer by the company.

Fifth P - people

Of the new P's, people refers to the more and more increasing importance of the people involved in the company. The world is getting more competitive and in many industries the only way to differentiate is the service the company is providing while marketing and during the maintenance of the product. The training, motivation and enthusiasm of the people employed have become critical assets to the company. Managers are trained in regarding of attracting and recruiting the right people and then how to keep them motivated and committed to the company. So called 'tacit knowledge' (Chun Wei Choo, 1998) and 'intellectual property' (World Intellectual Property Organization, 2009) have become key words among the human resource people. Companies need to have a staffing strategy in order to keep the good employees. Strategies are made for planning job design and description, training and appraisal of the employees. (Hooley et al, 2008)

Sixth P - process

The processes are also becoming more and more valuable in all business and especially in the customer service. The advanced technology is offering software systems to ease and to improve the ways to serve the customer and also making

sure that all the customers get equal service. CRM (customer relationship management) tools make it possible for companies to personalize the marketing letters based on the customer information. Developed and well established processes also ensure that all parts of the work are completed in the planned way and they give the management opportunity to control and compare the quality of the outputs of their employees. For example, CRM software, that gives reports of the amount of offers made for customers through the system and amount of offers that result in sales contract with the customer, is a simple way for a sales manager to follow up the work of salespeople. It can be followed from the operational rate point of view of salespeople, but also it can offer information about different customer segments and their profit rate compared to costs of sales. This kind of information helps the company to focus more sales efforts to those segments which show higher rate of profit versus costs and that way increase the company's overall profit levels.

Marketing is a social and managerial process aiming to fulfill the needs and wants of individuals and groups through creating and exchanging products and value with others. Selling and advertising are only part of the marketing process. (Kotler & Armstrong, 2004)

Seventh P – physical evidence

Physical evidence refers to the physical or tangible experience / service that the company offers to the customers. In consumer marketing, the importance of the experience that the customer gets from, for example, visiting the shop can be crucial. In clothing industry, the customer should sense from the first steps when entering a shop, if the shop is representing the same style, values and preferences that the customer has. For example, music that attracts younger people and colors or other solution in the interior can feel offensive and disturbing for adult customers, but make the target group feel 'at home' and wanting to stay and enjoy longer. Music, for example, has a very strong effect on consumers. Milliman Ronald E. has found in his studies at supermarkets that fast rhythm music makes people increase their walking pace and shortens their stay in a supermarket. (Jäätmaa, 2007)

In business markets it can be significant how the salespeople dress when they meet the customer. A sloppy, casual clothing and appearance does not necessarily give the impression that a respected finance bank would prefer, on the other hand an expert on plumbing showing up in the construction site in an Armani suit would also send a confusing message. The meaning of the physical evidence is relevant in all business but it has a different meaning and a different form in each case.

2.6 Business model

A business model is a conceptual tool which combines the value that a company offers to one or several segments of customers and the combination of the firm and its network of partners for creating, marketing and delivering the value and relationship capital in order to generate profitable and sustainable revenue and profits. The business model involves selecting core strategy and implementation. (Lee & Carter, 2009)

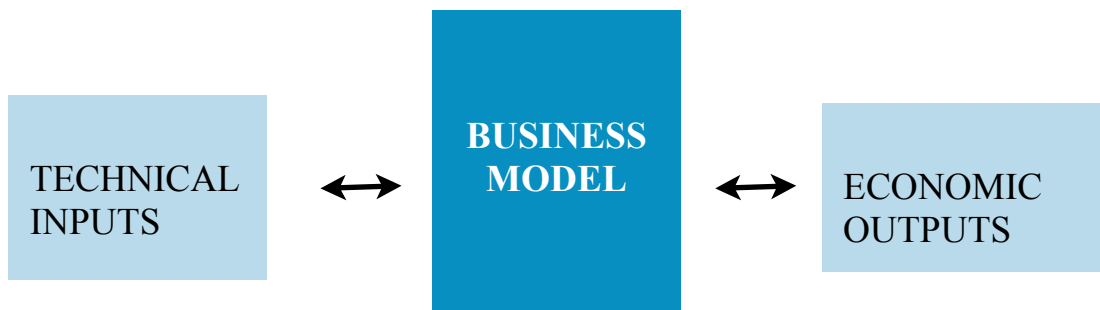


Figure 7. Role of the business model (Quickmba, 2009)

Business models are nowadays under a lot of pressure trying to cope with the effects of globalization, controlling the intellectual property rights and that way rising innovation costs. Henry Chesbrough (2006) writes about open business models and explains that concept of open business model includes openness to

innovations, ideas and knowledge from outside the company's own business and industry boundaries and also the other way around: Opening their internal ideas and knowledge to outside when they are not used within the company. This open business model concept saves both time and money in the innovation process. This can be done, for example, by adopting, licensing, co-operating with other existing companies and their technologies to add value to your existing product or manufacturing process. (Chesbrough, 2006)

2.7 Summary of the theoretical framework

As a summary of the theoretical framework, the key focus in this research is the marketing strategy. It is like a story line behind the company and its products. Just like a good book, the marketing strategy also needs to be developed so that the customer can relate to the message and is captured by the story, which in this context means believing in the solution and the promise that the product or service is offering.

Development of the marketing strategy should be guided by a clear vision, mission and objectives. The objectives should be SMART: Specific, measurable, achievable, realistic and time-framed. (Maylor & Blackmoon, 2005) In the end, if the marketing strategy is successful, the company will achieve the objectives. Marketing strategy points out the story line from the present situation to the point of reaching the set objectives. In this research the marketing strategy develops from the situational analysis, segmentation of the target market and evaluation of the right combination of the marketing mix, keeping in mind that all the different factors need to be in line with the company's objectives.

In the next chapter, there will explained what research approach and methods were used in collecting and analyzing the data needed.

3 RESEARCH APPROACH AND METHODS

The researcher will start with the evaluation of different research methods and explaining the approach and philosophy that was chosen for this research. First, there will be comparison of the main approaches, presented by different authors and explanation of the choice for this research. The chosen approach, will be presented in more detail, explaining the ways that this approach offers for collecting, analyzing and presenting the data.

The quality of the findings in a research can be evaluated with the following criteria:

- Reliability - is the finding going to be the same, if the research is repeated?
- Validity - How well does the findings define the real situation without being misled or influenced by individual perspective or purpose?
- Credibility – Are the findings presented in a professional way and with clear evidence to support the findings?
- Generalizability – How applicable are the findings in the research in a wider context? (Maylor & Blackmoon, 2005)

In this chapter the researcher will also point out the different quality issues regarding the study, except for generalizability, which is not required criteria for a single case study.

3.1 Evaluating the different approaches

The researcher has compared the scientific and ethnographic approaches to research and the research process in order to be able to decide what approach to use. In addition to these two main approaches (Maylor & Blackmoon, 2005) there is a case study approach which is also used in multi-method researches. When evaluating and choosing which approach is the most suitable, it is important to consider which approach offers methods, techniques and thinking that would help in answering the research questions. (Maylor & Blackmoon, 2005) According to

Collis & Hussay (2009) the two main paradigms are positivism and interpretivism. They define the paradigms as a framework that guides how research should be conducted, based on people's philosophies and their assumptions about the world and the nature of knowledge. In Maylor & Blackmoon's writings the positivism is presented as a research perspective of scientific approach and interpretivism as the research perspective of ethnographic approach. Furthermore Eriksson & Kovalainen (2008) name seven main philosophical positions for a research:

1. Positivism: Knowledge of the world is obtained through applying the scientific methods to experiences and to empirical world.
2. Post-positivism: A reformed version of positivism, also includes critique towards the basic assumptions of positivism.
3. Critical realism: Combines some of the ideas in positivist and constructionist thinking; concerned with the identification of the structures of the world.
4. Interpretivism and constructionism: Background in hermeneutics and phenomenology; concerned with subjective and shared meanings.
5. Hermeneutics: Refers to necessary condition of interpretation and understanding as part of the research process.
6. Postmodernism: Rejects the positivist, rational and generalizable basis for scientific research, which would explain the world from an objective standpoint.
7. Poststructuralism: Stands for the most extreme rejection of positivism within postmodernism. (Eriksson & Kovalainen, 2008)

On the other hand, Collis & Hussay (2009) write that under the two main paradigms, there are several methodologies associated with the main paradigms. While Eriksson and Kovalainen are including the paradigms; positivism and interpretivism within the seven philosophies, Collis & Hussay are placing some of these philosophies under the paradigms and also adding some more as you can see from the following table.

Table 3. Methodologies associated with the main paradigms (Collis & Hussay, 2009)

Methodologies associated with the main paradigms	
Positivism	Interpretivism
Experimental studies	Hermeneutics
Surveys (using primary or secondary data)	Ethnography
Cross-sectional studies	Participative enquiry
Longitudinal studies	Action research
	Case studies
	Grounded theory
	Feminist, gender and ethnicity studies

The researcher will use Maylor & Blackmoon's model as a foundation for the approach in this study because it gives a very clear perception of the two main approaches and includes all the considerations under it: Philosophical, perspective of the research, question types and data type. Their theory also specifies a third approach, a case study which is utilizing multi-methods and therefore does not entirely belong to either of the main approaches at least not automatically. Multi-method or multiple methods refers to combination of more than one data collection technique. Saunders, Lewis & Thornhill (2007) go further in determining the multi-method research. They divide multiple method into multi-methods and mixed methods. The difference in those is that multi-method does not mix quantitative and qualitative techniques. Mixed methods are further divided into two: Mixed-method research and Mixed model research. In mixed method research one can use quantitative and qualitative data collection techniques and analysis procedures but not at the same time, when again mixed model research one can combine them. This means that in mixed model research quantitative data can be analyzed qualitatively and qualitative data can be analyzed quantitatively. (Saunders, Lewis & Thornhill 2007) This study is a case-

study with multi-methods: mixed model research. Following figure points out the differences between scientific and ethnographic approaches according to Maylor & Blackmoon.

Table 4. Summary of the scientific and ethnographic approaches. (Maylor & Blackmoon, 2005)

Characteristic	Scientific approach	Ethnographic approach
Research philosophy	Philosophy of science	Philosophy of social science
Research perspective	Postivism Realism Empiricism	Interpretivism Constructivism Subjectivism
Archetype	Experimenter operating in a laboratory	Researcher present or participating in the field of interest
Questions that can be answered	What, how much	Why, how
Starting point	Structure of data – you know what you need to collect – theory-led	Unstructured – what you need to do emerges – data-led
World-view	Objective – the researcher is independent	Subjective – the researcher is part of what is being researched
Objective	To find general patterns or laws - generality	To understand meaning in one specific situation - depth
Underlying logic	Deduction	Induction
Who uses?	Predominant in economics, finance, operations research, management science, marketing	Predominant in human resource management, organizational behavior, organizational science
Role of theory	Testing the theory through development of hypothesis, collection of data, verification	Generation of theory through pattern analysis
Process	Predominantly linear, sequential, ordered	Predominantly iterative, overlapping, messy

Associated methods	The scientific method, of which surveys are an example. Modeled on closed-system experiments, minimizing bias, but limiting the possibilities of discovery	Video diaries. Recognizes social systems are most likely to be open systems, and tries to recognize personal biases and keep an open mind
Data type	Predominantly quantitative, predetermined	Predominantly qualitative, for example a series of statements or impressions
Finding	Measure	Meaning

The researcher will next go through the table considering the choice between scientific/ positivism and ethnographic/ interpretivism in this thesis. The choice between these two main approaches is quite clear in my thesis and it is case study following the ethnographic and interpretivism approach.

Interpretivism was developed from the needs of the social scientists not satisfied with the adequacy of positivism. Interpretivism claims in opposite to positivism that social reality is in our mind and is subjective and multiple. Social reality is affected by the act of investigating it. (Collis & Hussey, 2009) Postivism is mainly using quantitative methods and as an opposite interpretivism adopted methods trying to understand, translate or otherwise come to terms with the meaning, not the frequency of certain occurring phenomena. (Van Maanen, 1983) Since the research questions in this thesis are mainly aimed for understanding the processes and decisions of the potential customer, the researcher is using interpretive research and qualitative data. Qualitative data means data in a nominal form and quantitative data is information in a numerical form. (Collis & Hussay, 2009) The choice of qualitative data in this research is also clear because of the difference in how to choose the interviewees: In quantitative research the interviewees are chosen with random sampling in order to generalize the results, but in this case using qualitative research design, the researcher will try to select the sample so that is represents the market segments that are seen as the most

potential and whose decision making and behavior she is trying to understand. Also, the research is inductive since there is no hypothesis - existing marketing strategy – that the research would be testing, but the research will try to generate this strategy through interviews and analyzing of the data collected. The single case defined by the case company makes this a cases study with qualitative methods.

The main stages in a case study are selecting the case, preliminary investigations, data collection, data analysis and writing the report. (Collis & Hussay, 2009)

3.2 Qualitative interviews and other ways of collecting the data

The data was collected through multi-methods, which is common for case study; reading secondary data, meetings with the case company, preliminary investigation and finally using the field study methods: observation and semi-structured interviews. The researcher used qualitative interviews, which were mainly done face to face with the interviewee but which also included phone interviews and sending the interview questionnaire or questions by email in cases the interview in person was not possible. There are different types of qualitative interviews; structured and standardized, where the same questions are asked from all interviewees, guided and semi-structured interviews, where the interviewer has an outline of topics and issues she wants to handle and unstructured, informal interviews, where there might be some guiding questions to open the conversation but lots of freedom to let the conversation take it's turn. The researcher used semi-structured interviews to help control the time used and also because of the limited time there was to analyze the data. (Eriksson & Kovalainen, 2008) (Maylor & Blackmoon, 2005)

The first observation and interviews with the case company took place in Finland and the rest in a field study in Mumbai. During the field study in May-June 2009, the objective was to have 10-15 interviews with managers of small and medium sized companies in Mumbai, who are responsible for the company's purchasing decisions. One interview was estimated to take approximately one hour and was recorded. The topics of the interview were sent to the interviewees in advance.

The timetable for the interviews was planned beforehand and the goal was to cooperate and discuss with the Embassy of Finland and Finpro in Mumbai. The researcher trusted that both the Finnish Embassy and Finpro personnel would be experts in evaluating Finnish companies' challenges in the Indian markets.

Before the field study the questionnaires were tested in Finland with a couple of interviewees that shared some characteristics of the real target group, such as non-native English speaker with preferably Indian background.

This research method might have challenges with the business people having lack of time or changing schedules so that the interviews might be cancelled. The cultural and language differences between the researcher and the interviewees could also cause limitations for understanding and interpretation of the questions and answers.

There was also possibility that the gender of the interviewer might cause some limitations in the interviewing phase. However, Mumbai with many multinational companies and economic development does not necessarily represent the most traditional culture of India. Indian women are also more and more taking their place in the business world, for example, at Indian software companies, one third of employees are women and the increase in number of multinationals in Indian markets have facilitated a rise in the number of women managers and entrepreneurs in the corporate sector. (Khokhar, 2009)

The questionnaires for the interviews are as appendices 3 and 4 of this study. The choices of the potential customers for the interviews was done after the first segmentation of the markets explained in the empirical part. The questionnaires were planned so that they seek answers to the research questions.

The interviews with the officials would answer questions such as:

- What regulations and laws are there concerning wind energy?
- What kind of competition is there in the market?

The interviews with the potential customers would answer questions such as:

- What are the purchasing criteria for a specific energy form?
- How well does the case company's product meet the market's needs?
- What would be the right prize level and strategy in the market?

- What distribution channel is the best for the wind turbines?
- What kind of promotion methods do the customers value?

3.3 Ways to analyze and present the qualitative data

This research is using multi-method approach but more ethnographic and therefore the style and the content of the analysis and report will be more ethnographic than scientific approach. When conducting a multi-method research with mainly qualitative methods, it is important to manage the data collected carefully. Qualitative data is challenging and it is necessary to make sure all the data is traceable, reliable and complete. For example, the interviews need to be recorded in addition to taking notes in order to capture all the opinions of the interviewees.

For analyzing qualitative data, a researcher can adopt an unstructured analysis or structured analysis. An unstructured analysis of qualitative data is excellent in research processes where creativity is an important value and the researcher wants to develop something new and unique. If the research has a project deadline to meet, like in this research, it is better to choose the structured analysis approach. The difference from unstructured is that the researcher uses concepts and/or conceptual frameworks from the literature to structure the data. This research has structured the literature and theoretical framework and is using semi-structured questionnaires in interviews to diminish the need for induction in the analyzing phase. The structured analysis approach gives the data collected already limits and framework in the beginning of the research but still leaves space for interpretation in case the evidence differs from what was set as the framework based on previous researches. (Maylor & Blackmoon, 2005)

There is also a possibility to use open coding, a systematic process for identifying concepts, when analyzing qualitative data. For example when asking the potential customers about the criteria of purchasing energy devices and choosing the energy form, it might be possible that some key values and criteria starts appearing in all interviews. The basic codes can be generated after reading through all the material and then after coding the whole data, it can be grouped or categorized with post-it

note method or using a computer. Sometimes the coded data shows clear hierarchical pattern, in this case, for example, what are the drivers or processes for decision making when SME companies make purchasing decisions about energy sources. The researcher have used the mind-map software (NovaMind, 2009) for categorizing and organizing the data and for finding a possible pattern or description of phenomenon from it that could then be compared with the theoretical framework.

(Collis & Hussay, 2009)

3.4 Summary of the research approach and methods

The study was a case study conducted with qualitative approach with the author actually participating in the industry and the market area through a field study during spring 2009 in Mumbai and cooperation with the case company. The data was collected through observing the markets and the surroundings, visiting wind energy sites and companies, and interviewing potential customers and meeting with other stake holders in the market area. The in-depth interviews and discussions concerned wind energy, energy markets and the overall economical situation in the market. The data was then evaluated by using different marketing analysis tools.

4 DEVELOPING A MARKETING STRATEGY FOR THE CASE COMPANY

To formulate the marketing strategy, the researcher had to go through the phases of the empirical study pointed out in the structure of this research. The first thing in the empirical study was interviewing the case company and getting familiar with their company's culture and products. And at the same time, the researcher needed to do the first segmentation of the target market in order to be able to contact the potential customers and set up the interviews for the field study period. During the field study in Mumbai, the researcher visited wind energy sites and had discussions and interviews with the potential customers and other stakeholders. After the field study in India, the researcher completed the findings and the marketing strategy's other phases: situational analysis, segmentation of the markets, marketing mix and a business model proposition for the case company.

4.1 Study of the case company

The first interview with the case company took place on April 23th, 2009 in Helsinki. The researcher met the CEO of the case company and was briefly introduced to the product and the company. After the field trip to India, the researcher had an opportunity to work with the company more closely and learn more about the product and the company and its processes. The researcher participated in a negotiation with interested investors from India and also visited the manufacturing site of the composite parts in Ylihärmä during June, 2009. The objective was to establish enough knowledge of the company's resources and history to be able to complete a situational analysis including SWOT-analysis of the company and its products. The production and the product data was also gathered as well as understanding of the sales processes in the present markets. The product will be analyzed in more detail in the marketing mix part later in this chapter.

The case company was founded 1989 by the name Pem-Energy Ltd. They started concentrating on wind energy and wind turbines only two years ago and just recently had changes in the ownership of their shares and started new as MyPower Finland Ltd. They were previously involved in developing product that produces energy from hydrogen in fuel cells - also a renewable energy form. The prototype of their wind turbine was developed as a result of a R&D project at Lappeenranta University of Technology. The company is still actively cooperating with the University to approve the technology.

The company's biggest strength is the marketing know how combined with a very competitive product. MyPower brand was created in cooperation with a marketing communications company and the concept is very customer-oriented. The products are divided into three solutions based on the use/need of the product: MyPower Home, MyPower Free Time and MyPower Business. MyPower Home refers to a system where the wind energy is used to heat the homes, MyPower Free Time is developed for use outside the electrical grid, the energy produced by the turbine is rectified and charged into batteries. In MyPower Business solution the provided electricity is fed from the turbine through a frequency converter device into the internal electrical grid of a building.

MyPower Finland has no production of its own, it uses partner manufacturers around Finland to get a perfect combination in the final product and the assembling of the ready product happens at the place of installation. All parts are manufactured and packed individually and shipped to the installation site. For the mast, which is the least specialized part in the wind turbine, they use Modulmet Oy, a steel producer from Finland. The composite parts: wings and the shell for the turbine are made from patented Telene® plastic and they are produced by Junkkari Muovi Oy at Ylihärmä, Finland. They use a reaction injection molding and the Telene® plastic offers good features to the wings, such as freedom of the design, excellent combination of shock-resistance, lightness even in extreme conditions like - 40C temperatures. (Junkkari Muovi, 2009) The shell and the shape of the blades are patented by the case company. The generators are manufactured by Axco Motors Oy at Lappeenranta.

INTERNAL FACTORS:

STRENGTHS

- **PRODUCT/ BRAND:**
competitive, technical patents,
design product, production capacity
- **GOOD PRODUCTION PARTNERS:** capacity, credibility,
reliability
- **KNOWHOW/ technological:**
technical advisory board includes
people from Technical University
- **KNOWHOW/ business:** company
makes strategic planning, uses
professional marketing/
communication people, participates
in the organization of wind energy
industry in Finland

WEAKNESSES

- **Short experience from the
energy/ wind business, only few
reference cases in Finland**
- **Little of statistics from the
production capacity of the
turbines; proof of performance**
- **Low investment capacity of
their own**
- **Lack of human resources**
- **Lack of concentration,
multiple choices of new markets**

EXTERNAL FACTORS:

OPPORTUNITIES

- **Increasing demand for energy in
the world and especially in the
developing countries like India**
- **Increasing environmental awareness
--> Renewable energy standard
(RES); in India 6%**
- **Climate change: New laws,
regulations favoring renewable
energy sources, Co2 emissions
control**
- **No regulations concerning building
of windmills in India**
- **Wind energy is included in the
sustainable and cleantech industries
which are getting good benefits and
funding these days (Finnfund etc)**
- **Government subsidies in India**
- **Outsourcing**

THREATS

- **Small-scale wind turbines are
new to Indian markets: People's
awareness not so high in India
compared to some European
countries and USA**
- **Laws and regulations
concerning building of windmills
not existing in India, might cause
difficulties in the future / building
requirements**
- **Standardization of the products
not yet completed (globally): need
proof of performance**
- **Economical recession / dropping
prices of diesel**
- **Feasibility - grid connection
rules**
- **Safety requirements - also lack
of standardization**

Figure 8. SWOT analysis of the case company

The control systems and electrical system are produced by Uudenmaan Automaatio oy and Vacon Oyj and those are the key components having the biggest effect on the turbines overall production capacity.

The case company has patents for some of the parts but, for example, some key competitive features cannot be patented. These features include passive blade angle adjustment which results to the turbine having no cut-out wind speed and the other feature is the settings of the electrical system. At the moment there are no competitors in the Indian markets with turbine that could keep the power generation on during strong winds. The cut-out wind speed is the speed where the wind turbine stops production and turns away of the main wind direction.

Typically, the cut-out wind speed is in the range of 20 to 25 m/s. (Ackermann, 2005) The settings of the electrical system, on the other hand, make the difference in the production capacity and the output of the turbine.

The product and its competitive features are explained in more detail in the marketing mix chapter.

4.2 Statement of the strategic objectives

The case company wants to expand its operations to Indian markets through exporting or starting a subsidiary or joint venture in the country. Their first objective is to find a safe way to establish their marketing operations and to find a reliable partner or partners who already have knowhow of the markets.

The goal is to start the operations by the end of the year 2009 in India and after reaching a breakpoint in sales, they plan to start production in India to serve the growing markets. The breakpoint means that the sales in India increases so that the Finnish production unit cannot supply the turbines and/or it becomes more cost effective to produce the turbines in India. The starting of an own production unit in India is an investment of several million euros.

The growth can be reached with a three phase plan:

1. Stage: Starting a joint venture or a sales office in India - time period: end of year 2009.
2. Stage: Starting license production of some of the parts in India when sales increases to a certain point - time period: year 2010-2011.
3. Stage: Starting of a production unit in India - time period: 2011-2012.



Figure 9. Growth plan in India.

4.3 Situational analysis

Next, the researcher will focus on analyzing the situation in the markets in India.

The analysis is divided into two parts: Micro environment analysis and macro environment analysis.

4.3.1 Micro environment

In the micro environment the company has to consider the different factors operating in the market and in the particular industry. These are suppliers including the raw material suppliers and the partner manufacturers, competitors, interest groups such as the government of India and the state government of Maharashtra, customers and distributors like, for example, logistical chain and installation and service providers in India. The researcher will evaluate the micro environment by using the Porter's five forces model from the case company's point of view.

First of all, the **supplier power** is considered. The wind turbines consist of many different components and they all have different suppliers. According to the case company, most of the parts like steel mast, plastic parts (blades, shell) are easy to access and the material is easily available around the world. The key issues to a competitive product are the generator and the electrical system. Those have only few suppliers and the company has to have good relationship with the manufacturing companies. Once the generator type is picked, it takes time to develop the electrical system to capture the highest possible productivity level. Changing on either of those suppliers causes additional R&D costs. The company has a partner company in India preparing test parts of the wind turbine to measure how much would the manufacturing cost be in India and how close they can get to the Finnish quality standards. Probably, even after starting the production in India, the generator and electrical system would still be exported from Finland. The price fluctuations of steel can increase the costs of the mast and some other steel made parts.

The **threat of substitutes** is not very high considering that after the customer has made an investment decision to buy a wind turbine, they are not likely to switch to substitute energy sources easily.

Degree of rivalry is getting higher all the time. At the moment, the small-scale wind energy producers are few in India and the starting competition is only good

for the industry. All the competitors need the common media and promotion and any news about wind energy increases the awareness of people, considering that the news is positive. If the competitors were making bad quality products and the results they bring in wind production capacity would not be satisfying, that could also affect negatively to the whole industry.

In India there are currently four Indian companies: Indowind Energy Solution, Supernova Technologies, Unitron Energy Systems and Enercon Energy Solution. They are all quite small companies and as a curiosity Unitron Energy System informs it exports 90 % of its production outside India. Foreign companies with small wind turbines are only starting at the markets and not established properly. Information about them can only be found accidentally from newspaper articles or companies' own press releases. For example, Proven Energy from Scotland, UK announces having a first test turbine in Delhi, but the information is not yet common knowledge in India in any industry statistics. Also other foreign manufacturers might have sales representatives in the country but credible information about them is hard to find.

There are 153 private wind farms in India, one farm's total production power starting from 10 MW and the highest adding up to 161 MW. There is no detailed information about the size of the turbines on those farms. (Government of India, 2009)

Buyer power can be evaluated from two points of view: on the other hand there is not yet much competition among the manufacturers but of course all the manufacturers are still small and that gives the buyers bargaining leverage. Since the market is new, some of the companies might need results and revenues to pay back the R&D costs spend to develop the product, and might be forced to bargain the price. At the same time, since the market potential is so huge, a well established company with a quality product can at this point choose the customers and keep the prices at higher level.

Barriers to entry are low when considering the regulations and government's role. The government of India is welcoming the renewable energy sources and

offering incentives to private companies entering the markets. The energy demand is huge and growing with high speed resulting to that the society can't provide all needed energy and it is forced to open the regulations and possibilities for all private companies to produce and sell energy.

On the other hand, the developing of a competitive wind turbine can't be done without effort of R&D and financial investment. This will keep the short term competition low.

Next, the researcher will consider in more detail the **competition and competitors** in the industry globally. American Wind Energy Association (AWEA) indicates in its report on 2008 that at least 219 companies manufacture or plan to manufacture small-scale wind turbines in the world. According to their study, three of those are based in India and two in Finland. During this study, the researcher found out that there are currently four companies in India and four in Finland. In India, there are Indowind Energy Solution, Supernova Technologies, Unitron Energy Systems and Enercon Energy Solution. These companies are listed at the Indian Government site. During the field study in India, the researcher had a chance to meet the main engineer from Supernova Technologies, who had developed the company's small-scale wind turbines and had a project site in Navi Mumbai. He offered a chance to visit a project site with three 1,4 kW wind turbines on a rooftop in Navi Mumbai. (see figure 10.) He had just a day before our meeting changed to a new company which is planning on investing more on small-scale wind turbines development and wants to be a big player in the market, possibly also starting their own production in India.

In Finland, there are also four companies that have their own product development of small-scale wind turbines, most of them are not manufacturing the turbines in their own plants but they are using subcontractors for the production: Eagle Windpower Ltd, MyPower Finland Ltd, Oy Winside Production Ltd and Finnwind Oy. Globally both India and Finland are small - the dominant countries in the small-scale wind turbine production are United States (66 manufacturers), Japan (28 manufacturers) and Canada (23 manufacturers). (AWEA 2008)

The products are very diversified and since there is not yet standardization of the products, it is difficult for buyers to compare the competitive products. In India, the researcher noticed that the awareness of the people is very low, wind energy is mainly associated with the large scale turbines thanks to Suzlon, the Indian company who is the fifth largest large scale wind turbine manufacturer in the world. (Suzlon 2009) Even the competition is rising, the markets will still be benefiting from each competitors' marketing efforts and providing education to the consumers. Small-scale wind turbines still need to proof their production capacity to the consumers as well as show credible pay-back times for the capital investment needed to start wind energy production in order to get the overall market to grow in scale.

This study will only give an overall picture of the competition in the markets. There is a need for more detailed study about the competitors' product quality and power relations when the markets start growing and the competition starts to get harder. At the moment, the small-scale wind turbines are not so much competing with each other as they are competing against other means of energy and the awareness of people. One of the key questions is also the credibility of the whole industry in the eyes of the customers.



Figure 10. Supernova Technologies's 1,4 kW wind turbines on the top of the Lords Building in Navi Mumbai. (Picture by the author)

4.3.2 Macro environment

In this study, the macro environment is evaluated by using PESTEL analysis starting with **political and legal** issues. India's constitution is quite heavily based on the British model of parliamentary democracy also influenced by the Constitution of the United States of America. Modulated from the American model, India also has a federal form of government. However, the central government in India has greater power in relation to its states, and the government has adopted a British-style parliamentary system. The three branches of the union government are the executive branch, the legislative branch and the judicial

branch. The executive branch includes the president - head of state, Smt. Pratibha D. Patil, the vice president and a Council of Ministers.

The powers of the president are mainly nominal and the president normally acts on the advice of the head of the Council of Ministers, the prime minister, Dr. Manmohan Singh. The legislative branch consists of two houses of parliament: the lower house, Lok Sabha and the upper house, Rajya Sabha and the president of India. The judicial branch holds the Supreme Court, which decisions are binding in the lower courts of state governments. The overall political situation in India is quite stable. The general election was completed in May, 2009 and the new government was formed in order. (Government of India, 2009)

(Encyclopaedia Britannica 2009)

The risk factors in the political surroundings of India concern the relations with Pakistan and the fear of possible terrorist attacks coming from the Pakistan side and more precisely from the Talebans. Since the tragic bombing in Mumbai, in November 2008, there hasn't been violent attacks in India. The Kashmir area on the other hand is causing political stress and the independence requests of the state have become louder in the recent times. There are a lot of political strikes and protests against the Indian army's presence in Kashmir. US interference in Pakistan and the Taleban situation is hoped to calm the situation and the new government of India has already made significant PR acts to improve the official relations with Pakistan government to finally heal the relations after the Mumbai terrorist attack.

For wind energy the legal issues are favorable. India has exempted the production and selling of energy with the Electricity Act 2003, and the National Electricity Policy 2005. Due to the huge growth rate of the economy and the increasing gap between the demand and supply of energy, the state has opened the Indian energy transmission giving the consumers freedom to purchase the energy from any producer.

*"The State Commission shall discharge following functions, namely
- "promote co-generation and generation of electricity from
renewable sources of energy by providing suitable measures for*

connectivity with grid and sale of electricity to any person, and also specify, for purchase of electricity from such sources, a percentage of total consumption of electricity in the area of distribution licensee”. (Indian Government, Electricity Act, 2003: 86(e).)

The Electricity Act, 2003 provides that co-generation and generation of electricity from non-conventional sources would be promoted by the SERCs by providing suitable measures for connectivity with grid and sale of electricity to any person and also by specifying, for purchase of electricity from such sources, a percentage of the total consumption of electricity in the area of a distribution licensee. Such percentage for purchase of power from nonconventional sources should be made applicable for the tariffs to be determined by the SERCs at the earliest. Progressively the share of electricity from non-conventional sources would need to be increased as prescribed by State Electricity Regulatory Commissions. Such purchase by distribution companies shall be through competitive bidding process. Considering the fact that it will take some time before non-conventional technologies compete, in terms of cost, with conventional sources, the Commission may determine an appropriate differential in prices to promote these technologies. (Government of India, National Electricity Policy, 2005: 5.12.2.)

If a customer wants to buy and set up a wind turbine on his own premises, there is no licenses or permissions needed. In case the wind turbine is placed on a rooftop of a building there should be a structural approval from the architect of the building ensuring that the building will endure the possible weight and vibration of a wind turbine. Although, giving a notification and information of the installed wind turbine to a local government authority is recommended according to an experienced wind turbine manufacturer Mr Sunil Tongay. (Tongay S. 2009)

Economical environment in India is showing huge potential: GDP is (US\$ billions) 1,217.49 and growth percentage of GDP in the year 2008 was 7.1 %. Even, the inflation is reasonably stable as shown in a figure below. (The World Bank, 2008) The following table shows the comparison between the economical key ratios of India, China and Finland.

Table 5. The key economical ratios of India, China and Finland from the World Bank, 2008.

the year 2008	INDIA	CHINA	FINLAND
GDP (US\$ billions)	1,217.49	3,860.04	271.28
GDP growth (annual %)	7.1	9.0	0.9
Inflation, GDP deflator (annual %)	7.3	7.2	2.7

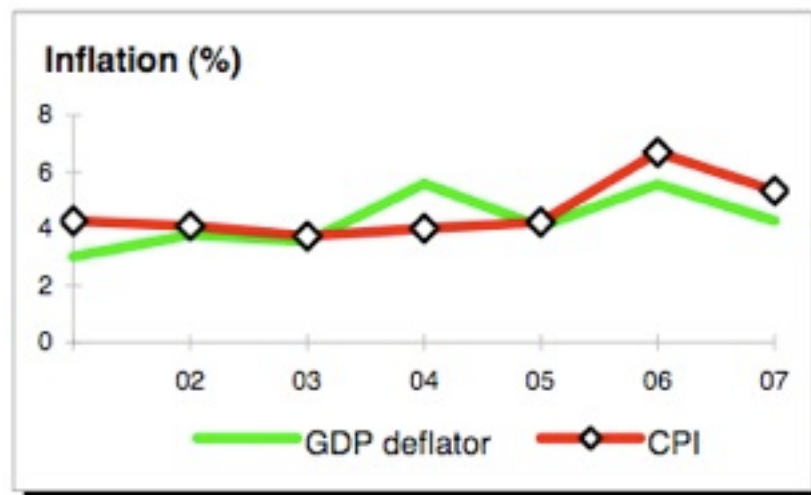


Figure 11. Inflation in India (The World Bank, 2008)

India's population is also growing fast and in many ways the consumption and the growth are following the ones in China. For example, it is estimated that mobile phone connections in India will reach 600 million by 2011 which places it

into the second highest place after China. (Centre for Telecoms Research, 2009)

To give a perspective of the growth: astounding 86,99 million new mobile connections during year 2007 is more than the entire market in Italy.

(International Telecommunication Union, 2008)

Interest rates are high in India and the taxation system can also be complicated to the foreign companies. Taxes are levied at federal, state and local levels. federal level includes government collecting income tax, customs duties and tariffs, and VAT such as the sales tax. The states collect their taxes mainly through stamp taxes for issuing various licenses and the local government has the right to collect property taxes and fees for services. (Encyclopaedia Britannica 2009)

Fortunately, the government is giving many benefits and incentives to the renewable energy producers such as accelerated depreciation - 80 % of the investment in the first year, no income tax for any consecutive 10 years for the first 15 years from the date of installation, concessional import duty of 5 % on 5 specified wind turbine components and their parts and favorable tariffs and policies in several states. For example, in Maharashtra state the fixed tariff for wind energy is Rs 3.50, in Rajasthan Rs 3,60/unit and in West Bengal Rs 4/unit. List of all the central incentives are as an appendices 5 of this research. (Wind Power India, 2009) The fixed tariffs of different states are all included later in this chapter.

The latest news from the government of India is that they unveiled new tariff norms to promote new investments in renewable energy on September 17, 2009. The new norms are said to provide approximately 19 percent pre-tax return on investment for renewable energy plants for an initial period of 10 years and according to the new tariffs, per kilowatt hour of power generated from wind power will range from 3.76 rupees to 5.64 rupees.(Verma & Mukherjee, 2009)

The currency of India is rupee (INR). As a curiosity, the Indian rupee has not had an official currency sign and the Government of India had announced a public contest for designers to come up with a symbol. The proposal were to sent to the Ministry of Finance by 15th April 2009. (Digital inspiration 2009) The value of the currency according to the Central Bank of Europe at 15.7.2009 is one rupee

equals 68,5150 €. One rupee equals 100 paises. In Indian English large values are counted in terms of thousands: "lakh" equals hundred thousand (1,00,000 marked according to the Indian numbering system) and "crore" equals 10 millions or 100 lakhs (1,00,00,000 marked according to the Indian numbering system). The use of words million and billion is not very common. The bills of rupees can be recognized from the picture of Mahatma Gandhi in them.



Figure 12. Indian rupee, 1000 Rs bill.

Both from economical and political risk point of view India is placed in Finnvera's country classification to grade 3/7 equalling to relatively low risks (0= advanced economy - no minimum premium rate, 7= very high risks). (Finnvera 2009)

The social and cultural environment in India is a vast subject. The country has a tremendous diversity of religions and languages. The main religions are Hinduism (over 80 % of the population), Islam (13,45%), Christianity (2,35%), Buddhism and Sikhism (1,94%). There are 17 major languages and 844 dialects according to the fact list of the Embassy of India. One of the strongest cultural heritage of India has been the caste system; the 'jati', Indian word for caste, which still today determines ones social status at birth. In today's India the caste system is still strong for example in a form of quota systems, reservations and marriages. The globalization, higher education and the growth of the economy has started influencing the system and the criticism is getting more powered and as a result

the government of India has decided to offer job quotas to the disadvantaged castes. (Gama, 2009) (Encyclopaedia Britannica 2009)

In business as well as in the higher education, the main language is English. This has been one of the reasons for Indian economical growth and increased its appeal among the developed countries. Some differences that the researcher learned from observations and in interviews are that the Indian organizations are usually quite hierarchical and in the management level there are mainly men. The overall business culture could be described as quite open and friendly; as soon as you are invited to a meeting or an interview, you can trust that you will get the information needed. For example, most of the interviewed companies showed the actual electricity bill when inquired about their electricity costs.

As part of the social and cultural environment in India, the companies also have to consider the corruption in the society. In India, especially the municipal official still use their position to achieve personal benefits and in many levels you have to offer bribes to proceed. According to the Transparency International organization, which studies and ranks the countries with a corruption perceptions index, India ranks at place 85 globally in the study, with CPI score of 3,4 in 2008. In comparison the corresponding figures for Finland are 5th place and score 9,0 and for example China is in place 67 with score 3,6. (Transparent International 2008)

The corruption and the layered governing system in India can be frustrating to a Finnish company. For example, during the field trip, the researcher learned that getting interviews or information from the local and state officials is very difficult as an individual and even when representing a private company. Many officials only accept inquiries and meetings through certain connections and recommendations. The company would need someone to recommend them and for Finnish companies it usually is Finpro, who is able to arrange the needed meetings and negotiations, for example, to get a needed license, with a written request with Finnish Embassy stamp. Without that kind of authorization, the requests will not be responded or you will be pointed to lower level persons and you find yourself "buying your way up" to get to the right decision level. The status as a Finnish researcher, presenting oneself with a company card, made it quite easy to get appointments with companies and at management level. One of

the reasons seemed to be that they were curious to meet a western woman and Finland was exotic enough to raise their curiosity. Still many of the interviews that were set up before traveling were cancelled at last minute and one of the biggest disappointments was that getting access to government officials was impossible for the researcher. Fortunately, there were other ways to find the information about regulations and energy industry by meeting private energy companies and through organizations like MERC, which was very helpful.

Wind energy has been utilized by mankind for centuries. Still small-scale wind energy in a form as it is discussed in this research can be seen as only starting its breakthrough in the world market. Most of the companies in the industry are small and have only recently finished the R&D phase of the products. **Technologically** small-scale wind turbines are diverse and they each produce and regulate its power differently. The goal of the development has been to improve the production capacity, power curve, grid-connectivity and cost efficiency of the turbines. The mass-production would bring the prices down and according to previous studies as well as the findings of this study, the high investment and long pay-back period are still the reasons for the slow breakthrough of small-scale wind turbines in the commercial markets. (Smith 2003)

Other surroundings concerning technological development in India, for example the communications technology is quite well spread, at least all the business hotels can offer fast internet connections and mobile connections work well in the whole state. One can say that all western standard technology is available, although, for example, electronic equipment cost the same or even more than in Finland and are, because of that, not affordable for normal working people in India. An example of the growth rate of spreading of the new technologies in India is that, even though, there is still 25 % of the people living under poverty line (CIA, 2007) it is predicted that mobile connections reach 600 million in India by 2011. (Modi Raj, 2007)

Environmental factors are very important factors in this study. The global warming and climate change overall is affecting the attitudes of people towards electricity use and the way it is produced. Since wind energy is truly offering an environmentally friendly way to produce energy without adding to the CO₂ emissions, it can safely emphasize the environmental benefits in its marketing. The constantly growing awareness of people about environmental issues is offering wind energy great opportunities in the markets globally.

Also when discussing about utilization of wind, one must consider the location and surroundings and their potential for the wind energy production. There is already information concerning the wind potential from 216 wind monitoring stations around India (A statistics of wind monitoring stations in Maharashtra state are as an appendices 6.) (Wind Power India, 2009) According to the Wind Power India's statistics, Maharashtra state is one the most potential states with wind potential. The next figure shows the most potential sites on a map.

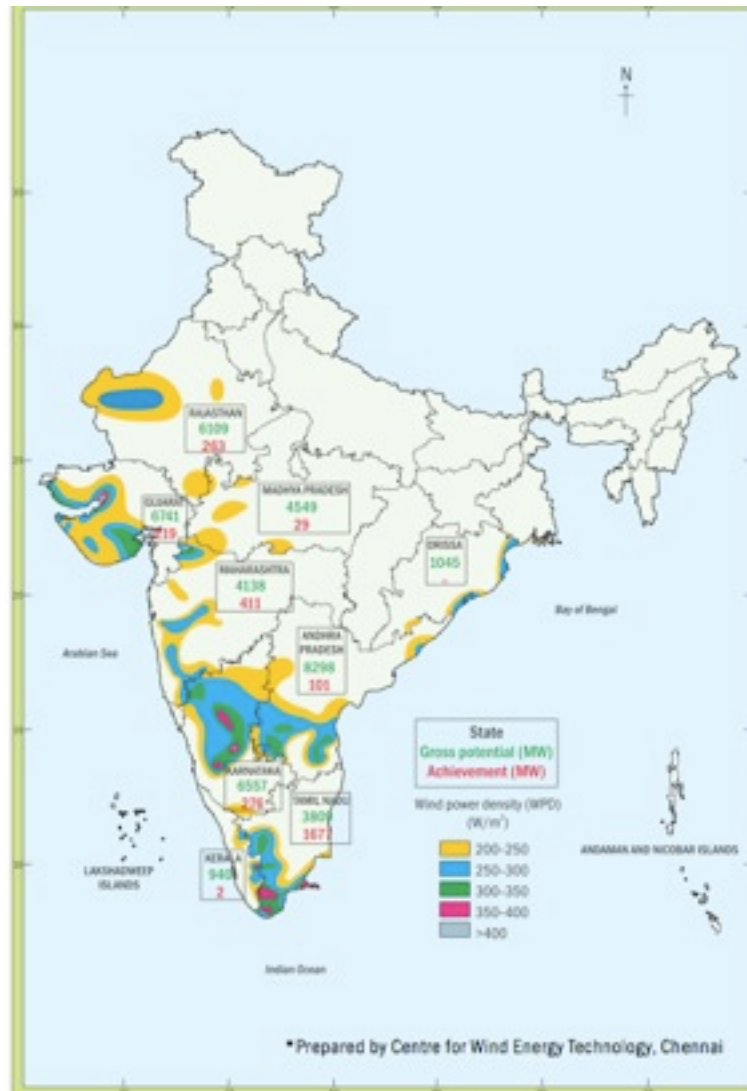


Figure 13. Map showing the potential wind power locations in India. (Government of India, Wind energy booklet, 2008)

4.4 Segmentation of the market before the field trip

The main target group is SME companies in the metropolitan area of Mumbai.

The researcher narrowed down the area by choosing a business district just outside the main city; Navi Mumbai. This new business and residential area has been developed by the Maharashtra state to ease the over crowded city and to facilitate the still ongoing growth of population and business.

The aim was to target companies from approximately 5-10 kilometers radius from the hotel where the researcher was located in CBD Belapur, Navi Mumbai. This

area is a business district and offers many possibilities and large range of companies and the short traveling radar would allow me to have more efficient usage of time. The traffic is very hectic in Mumbai and traveling across the city takes several hours.

Demographically the companies can be segmented by the size, location and state of technological development and organization type. The segments were first formed by the size of the company, dividing the companies into three groups: micro, small and medium sized companies. The researcher used the European Commission's definition, explained earlier, for this segmentation. The micro company stands for a company employing less than 10 persons and having an annual revenue maximum 2 MEUR. A small company employs less than 50 persons and has an annual revenue of maximum 10 MEUR. A medium company has employees less than 250 and annual revenue does not exceed 50 MEUR. The next segmentation method is attitudinal characteristics, such as what benefits the company is seeking with the purchase decision. The attitudinal criteria cannot be analyzed before the empirical part and therefore was not used as a segmentation approach when choosing the interviewees.

The third characteristics of segmentation is according to behavioral characteristics, which also needs further analysis and there for did not influence on the choice of the interviewees.

In conclusion, the researcher used only demographic segmentation in the planning phase. The interviewees were furthermore chosen by the location; being approximately within 5 km radius from the operating point in Navi Mumbai.

The objective was that the interviewees would represent industries that are common in Mumbai area. The Global Standard Industry Classification were used to segment the companies (Standard & Pools, 2006).

First choosing the most potential sectors from GSIC sectors:

- (25) consumer discretionary
- (40) financials
- (45) information technology.

From these sectors the segments were narrowed down to industries:

- (253010) Hotels, restaurants and leisure
- (252010) Household durables
- (252030) Textiles, apparel & luxury goods
- (254010) Media
- (401010) Commercial banks
- (451010) Internet software and services
- (451030) Software.

The 10 – 15 persons interviewed during the survey in India should represent different sized (micro, small and medium) companies, from the seven industries listed above. This way the researcher would have had minimum 1-2 representatives per industry segment and minimum 5 representatives per different size segment. Since there is many multinational companies in Mumbai, the researcher tried to have one third of the representatives coming from these companies and two third from Indian based companies.

In addition to the interviews of potential customers, the researcher interviewed the Finpro Trade Centre personnel for establishing understanding of the Finnish companies' challenges in the market and knowledge of the important officials and contacts for a Finnish company wanting to enter the markets. The researcher had requested interviews with Finpro's Mumbai's office with Head of Trade Centre, Anna Erkkilä and the market analyst Sudarshan Itkyl. Because of the busy timetable of Finpro, there was only meeting with Anna Erkkilä but the researcher was also able to keep in contact with her after the meeting for additional questions and adjustments. The objective was also to contact the legislation officials of Navi Mumbai's local government in order to find out about the regulations concerning setting up a wind mill but the researcher was not able to get a meeting with them. The researcher learned that it is very difficult to get meetings with the government and state officials without written request and recommendation from some respected source. For example, Finpro arranges and helps in arranging the needed meetings with officials for Finnish companies. They said that the embassy stamp usually helps in getting the right people to the meetings.

Fortunately, the researcher was able to set up a meeting at one of the biggest private energy companies in Mumbai and also got valuable information about the energy markets, regulations and industry in general from MERC, the Maharashtra Electricity Regulatory Commission and from the two wind energy companies' representatives that she met.



Figure 14. Map of Navi Mumbai (New Mumbai) with the area of the interviews marked: CBD Belapur - Nerul - Vashi - Mahape.
(Maps of India)

4.5 Further segmentation of the market after the field trip

The field trip and the studies of the markets after that proved that the choice of SME companies was a good one. Factors supporting this are:

- The scale of the SME companies throughout India is enormous. According to the World Association of SMEs (WASME) there are over 5 million SMEs in India, and they represent 95 % share of the companies and 40 % of the whole country's industrial output. SME sector is the second largest employer of human resources after agriculture. (WASME, 2004)
- To get a connection with a SME company and its decision makers is a little bit easier than to go after sales from the large companies, which usually are globally operating companies and have more complex decision making process and organization.
- Small-scale wind energy can bring quick benefits for SME companies with even low investments, on the other hand to supply energy for the large scale needs it is not so easy with the small-scale turbines: it means setting up a wind farm.
- Cooperation and joint ventures between the SME companies can bring possibilities to pursue bigger companies and business deals.

This research was concentrating in the Maharashtra state but most of the data can be applied for the whole of India. The laws and regulations are considered both locally in the state of Maharashtra and in India. There is also comparisons between different states in some cases, for example, about the fixed tariffs of wind energy. This research still concentrates mainly on the potential among the Maharashtra state.

There is listed the interviewed companies in the following table firstly according to their **background company characteristics**, more precisely the size of the company measured by the usage/cost of electricity per month. After that they have also labeled them with the GSIC sector code (Global Standard Industry Classification), number of persons working in the company, decision makers when considering the source of energy and the possible back-up system that the

company uses during the blackouts in the main grid. The unit price of electricity varies according to the usage hours and the location of the company. For example, if we compare the bank located at Vashi and an electronic retailer in Belapur, the bank uses more electricity but only during daytime and the electronics retailer who uses the electricity at the most expensive hours and on a different location, is paying 9,5 INR/kWh while the bank is paying only 3,8 INR/kWh. The cheapest electricity prices were at a business park: 3,1 INR/kWh, probably because the state offers subsidies for these parks. The most expensive prices go around 9 INR/kWh, for those using the energy at peak times of evening: 18.00 hours to 22.00 hours. The retail shops and hotel naturally need to use electricity at these peak hours, the shops are usually open till 22.00 to 23.00 and in the hotels also the usage increases in the hours of evening. If we then again compare the commercial users prices with the residential prices (smaller table) the business customer segments are far more potential customers for wind energy because of the amount of need in electricity and the higher prices they are paying already for the conventional energy forms.

The usage among the residential consumers vary a lot according to the use of AC and other electronic equipment. It is also worth remarking that most of the businesses have back-up systems but among the residents there is a clear dichotomy: the ones living in apartment buildings don't have back-ups but people owning their own houses might use small diesel generators. In the very small electricity bills of residential consumers, the portion of fixed/demand charge and standby charge are higher than they are on commercial consumers bills. The official tariffs of a private electricity company, Reliance Energy Ltd are as an appendices 7.

Table 6. Usage of electricity among the interviewed companies.

Industry	Amount of personnel	Usage of electricity kWh/month	Cost of electricity INR / month	Decision makers concerning electricity source	Back-up system
Hotel (253010)	100	170.000	1.500.000	centralized	2 diesel generators
Bank (401010)	N/A	116.000	450.000	several	2 diesel generators
Electronics retailer (252010)	40	35.000	335.970	centralized	diesel generator
Engineering (451030)	250	31.000	217.000	one	diesel generator
Shoes & Clothing retailer (252030)	8	12.578	97.000	one	no back-up system
Software design (451030)	17	3.225	10.000	several	no back-up system
Web design (451010)	10	520	6.500	one	diesel generator
Advertising (254010)	3	179	2.000	one	UBS batteries

Table 7. Usage of electricity among the interviewed residential users.

Size of the family (all apartment buildings)	Usage of electricity kWh/ month	Cost of electricity INR / month
1 person	N/A	1000
3 persons	150	800
4 persons	2764	27.675

If we then consider the **attitudinal characteristics** of these companies, we can draw a conclusion that a company that has higher electricity consumption is probably more interested in discussing the options of new energy sources and ways to save energy. According to this study, those companies whose electricity costs, per month, are close or over 100.000 rupees (approximately 1.600 €) are very eager to consider other options and most of them find the diesel generators as a big burden. It is logistically and maintenance-wise lots of work for companies who use approximately 35 liters of diesel per day depending on the duration of the power-cuts.

A couple of the interviewed managers also stated that the diesel generators are noisy and smelly, even though they are usually located in the side of the building or in the basement. For these customers, small-scale wind turbines would bring benefits because they are almost maintenance free, very silent and odorless. Several interviewed managers also stated that the price fluctuations of diesel prices together with the supply problems of the main grid can become a threat to a healthy business. Currently, the economic recession has decreased the diesel prices but they are expected to rise back again.

In the interviews, most of the managers showed some interest towards green and ecological energy form, but it did not rise as the most important criteria for them. Wind energy should also proof to be cost effective and secured source of energy in order to be approved.

When questioned about the purchasing criteria for energy source the most important factor that came up was costs, second the security meaning uninterrupted supply of electricity, then came green values and quality of the product. Also brand, maintenance requirements and fear of running out of diesel were mentioned as reasons influencing the energy purchase decisions.

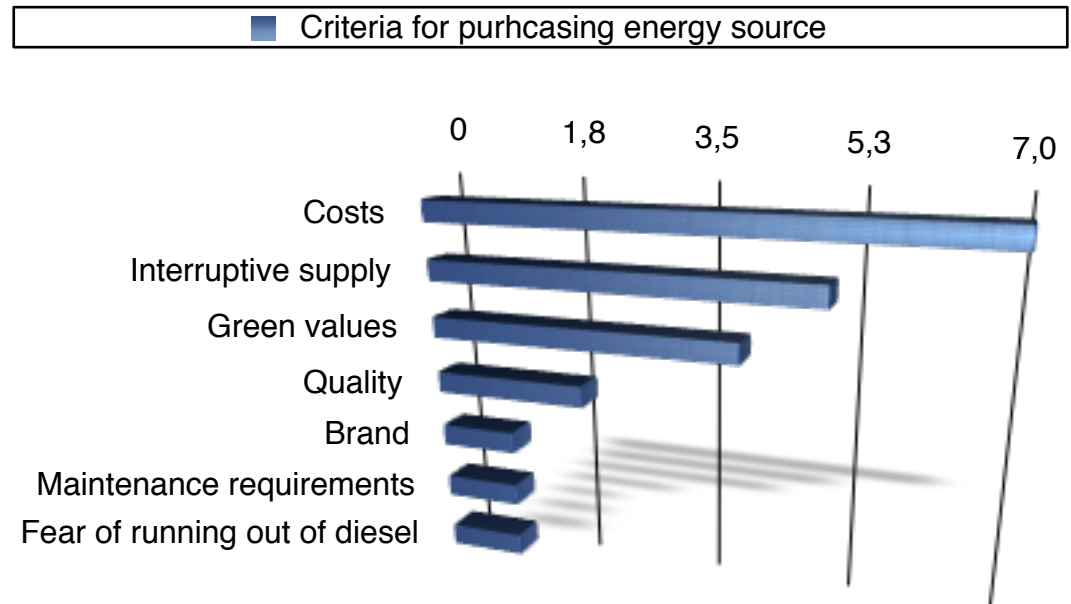


Figure 15. Criteria for purchasing energy source according to the interviewed companies.

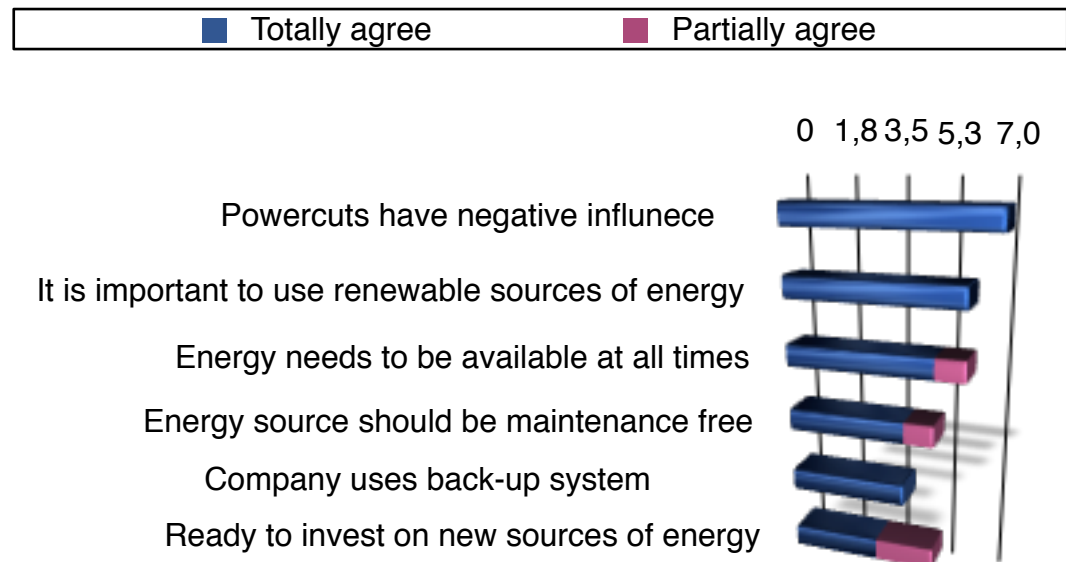


Figure 16. Statements regarding the energy and its importance to a company according to the interviewed companies.

After the interviews and the meetings with several industry representatives in India, the researcher noticed that the green values are appearing already in people's discussions but the real actions are still not there. Green values are strongly emphasized in the national media in India and people are slowly getting more aware of things than before. Still today, the most important factor when choosing an energy source for a company is the costs and the availability of the energy. Companies are so used to tackling with the problems of power-cuts and dealing with diesel generators that some people don't anymore recognize that power-cuts appear. When inquired in more detail, they do admit or realize that they use a diesel generator to generate the energy for the times of power-cuts but they haven't really thought about it that way. One can say that it has become a necessity and that way a truism.

As **behavioral characteristics** that came up in the interviews and through the observation of people, the researcher would point out the curiosity and eagerness of Indians in general. The managers are quite open, they share information and discuss very freely in the interviews. This curiosity and openness can bring possibilities to new energy forms and new ways of doing business altogether.

The Indian managers, that were met and interviewed, seemed quite ready to experiment new things and to develop their companies. If small-scale wind energy is presented as an opportunity, a new and fresh, western way to manage the company's energy needs, it might get a good welcome. The field study was still quite narrow to make further conclusions of the behavioral characteristics of managers in SME companies in India.

One interesting target segment came up during the field trip in India. Although, the researcher was targeting the SME sized companies, she found out that the telecommunications is extremely wealthy and rapidly growing business in India. According to an American company who has developed a solution for telecommunication towers and their standalone energy generators, the telecommunication towers around India have quite standard needs for energy. The company is recommending their own solution combined with a small-scale wind energy turbine, the size of 4-5 kW for powering up these telecommunication towers. (Nextech Energy L.P., 2009) Those solely would represent huge business opportunity since the amount of the towers in India is expected to rise over 500.000 pieces by 2015. (Bharat Book Bureau, 2009)

The recommendation of the most potential target segments are shown in the table 5. Outside the original scope, there are the telecommunication towers which do not represent SME sized businesses but would provide a good opportunity as the small wind turbine production capacity fulfills the need of one telecommunication tower. This segment would be pursued through a medium sized American company who has already established the connections with the telecommunications companies in India and tested it's own energy solution in Mumbai. (Nextech Energy L.P., 2009)

The next most promising segments to provide the wind turbines for, would be the rooftops of building complexes and shopping centers. In Mumbai, those are the only existing sites where small-scale wind turbines and solar energy is in use already. For example, many building complexes use wind or solar to empower the lightning systems of common areas such as corridors, parking lots and gardens. Also the newest shopping centre in Navi Mumbai, Inorbit Mall, is using solar panels on the rooftop for this very purpose.



Figure 17. Windmill powering a telecommunication tower in Alibag, Maharashtra state. (Picture by Manoj Roy)

The non-profit organizations, such as schools or other state buildings and institutes are interesting target groups mainly because there are many of them and the investment subsidies of the government are very generous towards renewable energy projects for non-profit organizations. The problem with this target group is the slow and corrupted way of decision making in these organizations. This group should be targeted with some amount of efforts from the beginning as a long term growth plan. This also requires building good relations and connections through an official path, for example, using government level conferences such as the

coming technology summit between India and Finland on November, 2009.
(Finpro, 2009)

Table 8. Potential target segments.

Industry type	Other criteria	Strategy type	Energy needs / turbine or windfarm
Tele-communication companies: in specific the TC towers	<ul style="list-style-type: none"> - Can be potential in all sites, existing and new - more potential in remote areas where energy supply difficult 	Direct sales of turbines or power purchase agreement (PPA)	4 - 5 kW wind turbine per site
Construction companies: residential complexes and shopping centers	<ul style="list-style-type: none"> - Starting with areas with higher electricity prices because of transmitting costs (in Mumbai: out of the actual island of Mumbai) 	Direct sales of turbines or power purchase agreement (PPA)	Using as back up source, not fulfill the whole need / several 4 kW wind turbines per site (small wind farms on rooftops)
Medium size commercial users: Banks, hotels, business parks	<ul style="list-style-type: none"> - Starting with areas with higher electricity prices because of transmitting costs - companies who promote green values in their marketing 	Direct sales of turbines or power purchase agreement (PPA)	Using as back up source, not fulfill the whole need / several 4 kW wind turbines per site (small wind farms on rooftops or nearby)
Small size commercial users: Software/IT companies	<ul style="list-style-type: none"> - Companies that want to profile as green - Areas where the powercuts are severe and electricity prices high 	Direct sales of turbines	Usage of electricity up to 10.000 kWh/month / 2 pieces of 4 kW turbines

Industry type	Other criteria	Strategy type	Energy needs / turbine or windfarm
Non-profit organizations (schools, government buildings)	- Starting with new locations and building projects	Direct sales of the turbines or power purchase agreement (investment subsidies 70-80% of the investment)	Using as back up source, not fulfill the whole need / several 4 kW wind turbines per site (small wind farms on rooftops or nearby)

4.6 Marketing mix

In this chapter, the researcher will go through the different, possible marketing mix choices that the case company has. Different options have been considered at the same time cross checking that each market segment were taken into consideration. In the end, the case company needs to decide weather they can carry out different marketing mix for different market segments in this phase of the business. Since, the marketing strategy for India is at an introduction phase it might be too expensive to try to introduce the product to the markets with several different marketing mixes, which all would need investment on communications, training etc.

In this case the customer has two strategic choices: they can sell the wind turbines directly to the end users or they can install the turbines at the site themselves and make a power purchase agreement (PPA) for selling the energy produced by the wind turbines for a fixed price for a fixed period of time. These two strategies have partially overlapping customer segments but they need different kind of sales and marketing concepts. The direct sales can be done through vast and various sales channels around the India, but the PPA sales includes more risk taking and investment capital and for that they should have their own project sales organization and preferably a good, reliable partner.

4.6.1 Product - 4 kW wind turbine

The case company has two product strategies: direct sales of the wind turbines and setting up wind farms and selling the produced energy. In a case of investing on the wind farm, the company can make power purchase agreements (PPA) with the endusers and secure the investment payback. The two different product strategies will be discussed separately.

1. Product strategy: Direct sales of wind turbines

This study concentrates on the new turbine of 4 kW from the case company. The company also has a 2 kW turbine and has plans to invest in the future to develop one bigger turbine, not exceeding the 10 kW. According to their research, the production capacity of a wind turbine does not rise in straight correlation with the increase in kW capacity, meaning that two 4 kW turbines produce more energy than one 10 kW turbine. Also when the turbine size increases, it increases the price of logistics, installation and need for space.



Figure 18. MyPower wind turbine. (Source: MyPower Finland Oy)

They have profiled the products according to their use: MyPower Home, MyPower Free Time and MyPower Business. Home refers to a system where wind energy is used to directly heat the homes, Free Time is developed for use outside the electrical grid, meaning that the energy produced by the turbine is rectified and charged into batteries. In the business solution the electricity is fed from the turbine through a frequency converter device into the internal electrical grid of a building. (MyPower Finland Ltd, 2009)

The case company's small-scale wind turbines are at the introduction stage of the product life cycle. The whole industry is only now starting to grow on manufacturing economies of scale. They still need to increase the production volumes, sales force and technical support but they are at the same time burdened with the R&D costs. There are also some missing data and test results concerning some features and durability issues, especially from different environmental circumstances such as effects of snow, ice, sand and other factors in the air that the turbine and blades get in connection through time.

The product can be divided into three parts: core product, product attributes and support services.

A.) Core product: Features, functions, benefits -> value to the customer.

In the following table is presented various technologies in wind turbines and the case company's product features are pointed out with color.

Table 9. Various technologies in small-scale wind turbines.

AXIS	Vertical	Horizontal
DIRECTION	Upwind	Downwind
BLADES	Three	Two
SPEED	Constant	Variable
REGULATION	Stall	Pitch
GENERATOR WINDING	Single	Double
GEAR	With Gear	Gearless
ELECTRONICS	Direct AC	AC-DC-AC

When comparing the key manufacturing trends and R&D needs stated by the stakeholder workshops held by US Department of Energy (AWEA 2008) to the features in the case company's product, the researcher noticed that they have already solved many issues that were recommended in the workshops. For example, the AWEA report states that manufacturers should concentrate on improving the efficiency through developing the blades and alternators. In the design of blades, the efficiency can be improved by increasing the swept area, also the material of blades is being improved and the new composite materials and molding processes are improving the capacity. The case company is producing its blades from a patented composite material with a special molding process to ensure the durability of the blades. The shape of the blade is also patented and design is aerodynamic to achieve the best possible swept area. One of the things the report pointed out was the need to reduce the number of components in a system and to minimize the use of moving parts and mechanical furling systems. The case company's turbine has no rudder, which can still be found in most of the models in the markets and which is, most likely, the first braking part in a wind turbine. One of the key competitive functions in the case company's turbine is that there is no cut-out wind speed, meaning that it doesn't stop producing energy at high wind speeds like most of the turbines in the markets.

The core issues from the customer point of view in the wind turbine are the production efficiency presented as nominal power and annual output. Other customer requirements or criteria that can be seen important to customers are quietness, minimal maintenance needs, no interference (for example, TV signals, neighbors), safety requirements, simple to operate, possibility to follow the productivity and the space requirements. (Smith 2003)

The nominal annual capacity for MyPower 4 kW turbine is over 35.000 kWh, which means that with the effective utilization rate of 40 % it gives annual yield over 14.000 kWh. The annual output varies depending on the wind speeds on the location. MyPower wind turbines start producing energy with a wind speed of 2-3 m/s, this is called the startup speed. The highest productivity is reached at 8-10 m/

s wind speed and this is called the nominal wind speed. Even though MyPower wind turbines do not have cut-out wind speeds, the productivity does not rise after reaching the nominal wind speed.

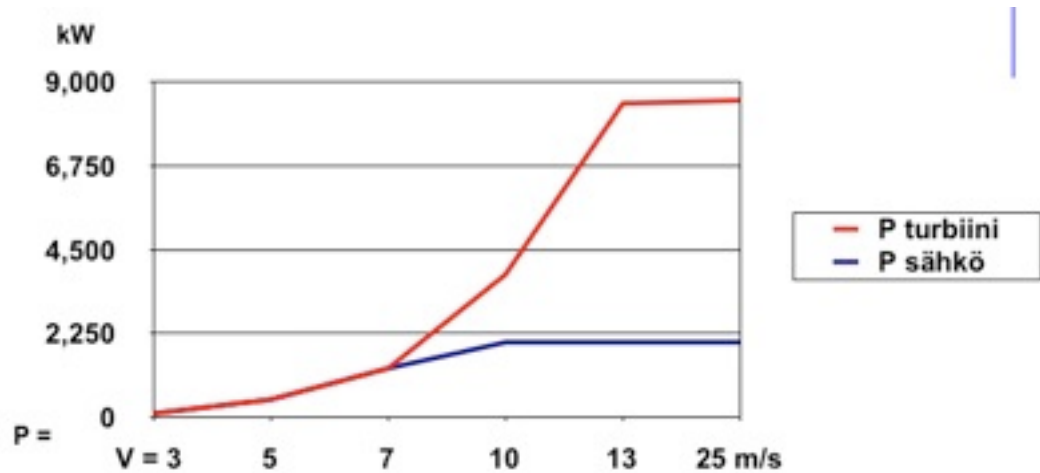


Figure 19. MyPower 2 kW wind turbine's power curve. The red line showing the turbine power and blue line showing the electricity production curve. (Source: My Power Finland, 2009)

The case company has done noise measurements at the wind speed range of 5-7 m/s and with a background noise of 46-52 dB (only wind, no traffic). According to their results, the sound of wind turbines is generally not considered disturbing if the noise level is less than 10 dB(A) higher than the level of background noise. In their measurements (in table below) the noise of the wind turbine does not exceed the 10 dB(A) even when standing next to it.

Table 10. Noise measurement of the case company with wind speed range 5-7m/s and background noise 46-52 dB. (MyPower Finland, 2009)

Distance from turbine	Noise dB(A)
0 m	46.2
5 m	47.2
10 m	47.9
20 m	46.8

B.) Product attributes: Brand, design, country of origin, price and packaging.

In the Indian markets, a western brand and Finland as the country of origin for a technological product can be seen as an advantage. The case company is building a brand for the product in the European markets and they want the brand image to be customer oriented and they have stated their brand values to be environmental responsibility, independence and openness:

”Independent electricity without burdening the environment”.

(MyPower Finland, 2008)

The company has emphasized the importance of the design, they want to distinguish themselves from the competition with, for example, the color, which is not white but steel-gray, and also with the design of the blades and the shell for the generator. The design is patented. The significance of the design is very important in some target segments and especially in the urban surroundings, when the wind turbines are perceived as part of the business unit they are sited. For example on a rooftop of a hotel, they have to blend in with the design and surroundings to be approved. In Mumbai, the luxury hotel Intercontinental was considering wind turbines but they were refused because they did not suit with the design and architectural aesthetics of the hotel. (Dubey P. 2009) Previous study has shown that consumers expect to communicate, with the wind turbine, that they are protecting the environment. For the businesses it is also growingly important to show that they are a company, who respects the environmental values and takes that into consideration in their operations. So the design factors of wind turbines should also consider the need of being aesthetically pleasing and

accepted by the neighbourhood - the environmentally friendly image comes as a bonus. (Smith 2003)

The marketing prices of the small-scale wind turbines are surprisingly same in India than they are in the European markets. In this research I will discuss the price issues later.

C.) Support services: Delivery, installation, warranty and after-sales services.

The wind turbine is a technical device and demands expertise in installation and after-sales service. It is important that these services and trained experts are available in the market as soon as the sales starts. In this case the final assembly of the product is done at the installation site. The different parts are packed and delivered from different partner producers and assembled and installed at the site by outsourced installers. In Finland the company is cooperating with Eltel Networks, but for the markets in India they have to look for another partner. There are already several wind energy generators (WEG) erection contractors available in India. (Consolidated Energy Consultants Ltd, 2009)

One important factor from customer point of view is that they wish the assembling and installation to be easy and also to have minimum trouble with planning and permissions. In some European countries the permission and red-tape of municipal authorities is already slowing down the sales of the wind turbines. (Smith 2003) (MyPower Finland 2009) In India the owner of the building can make the decision alone.

In conclusion about the product, considering the selling of these turbines, and the product feature role in the marketing mix, one can state that the most important key features in the Indian markets are security of supply and cost efficiency. Next comes the design issues including brand and the environmental factors. According to the interviews and discussions in the market, the competitive edge of MyPower wind turbines in Indian markets are:

1. Better productivity compared to the competitors
2. No cut-out wind speed, which is a new feature in the markets.

2. Product strategy: Power Purchase Agreements (PPA)

The commercial-sector customers have had difficulties with financing the wind turbines, especially the more developed and more expensive models on the market, and therefore, they have found Power Purchase Agreements (PPA) to be more attractive. It lowers the threshold of decisions and enables SME businesses, schools and governments to change to renewable energy without high capital costs and risks included in owning the generating equipment. (AWEA, 2008)

This PPA strategy can have much potential in the developing countries, in markets like India, where the investment capability is even lower and the demand for energy alternatives is huge.

4.6.2 Price as part of the marketing mix

Short comparison of prices of different models in the markets show that the price level is almost the same no matter where the turbines are designed and produced. The payback period is determined by the electricity prices in the target country. Depending on the strategy, the company has two different products to sell and also two different pricing strategies. Direct sales of the wind turbines and the other option is to sell the produced energy. The power purchase agreement is usually made for minimum 5 years to cut down the risk of the investment of the production and installation of the wind turbines. The price of the electricity sold is depending a lot on the market prices. For residential users, the electricity prices are lower than for commercial users in Mumbai. If the electricity is sold straight to the enduser, the price is set up by the markets and demand. When selling through private or state owned energy company, there is usually fixed tariffs for renewable energy.

In Mumbai the market price of the electricity varies from 3 INR/kWh to as high as 12 INR/ kWh when considering all the costs including diesel costs for the back-up generator. The electricity prices fluctuate a lot depending on the location, transmitting company and usage hours of the electricity. During the peak hours the kWh price is higher.

Table 11. Comparison of the payback time of different small-scale wind turbines in the market.

WIND TURBINE KW / PRICE WIHTOUT TOWER AND INSTALLATION	PRODUCTION UNITS PER YEAR	PAYBACK TIME IF ENERGY PRICE 0,06€/KWH	PAYBACK TIME IF ENERGY PRICE 0,14€/KWH
2 kW / 5.000 € MyPower Finland / Finland	average 5000 kWh	16,6 years	7,1 years
1.4 kW / 5.700 € * Supernova Technologies / India (includes a rooftop tower)	average 3.600 kWh	26,3 years	11,3 years
2 kW / 3900 € Eagle Windpower / Finland	N/A	N/A	N/A
2.5 kW / 5800 € * Proven Energy, UK	average 3.700 kWh	23,8 years	10,2 years
* Notice that the prices are calculated using the currency rate of 22.7.2009 and there might be differences in the final price depending on the VAT on each markets. The prices do not include transportation costs.			

Table 12. Fixed tariffs for wind energy in India (InWEA, 2007)

STATE	TARIFFS FIXED BY COMMISSIONS IN INR PER KWH
Tamil Nadu	3.40 (fixed)
Karnataka	3.40 (fixed)
Maharashtra	3.50 + escalation of 0.15 on an annual basis
Rajasthan	3.59 + escalation of 0.02 for the first 12 years + escalation of 0.01 for the balance 8 years
Andhra Pradesh	3.37 (fixed)
Madhya Pradesh	4.59 reducing at 0.17 per year till the 4th year; subsequently fixed at 3.36 till the 20th year
Kerala	3.14 (fixed)
West Bengal	4.00 (fixed, to be used as a cap)
Gujarat	3.37 (fixed)
Haryana	4.08 (with 1.5 % escalation per year)

4.6.3 Place/ Distribution as part of the marketing mix

The case company already has an existing logistical system in Europe and for the different parts from different partner manufacturers. Each manufacturing unit packs the products and then they are collected together and shipped to the installation site. In the beginning the company would export most of the parts from Finland using special containers for shipping. One container can hold 7 wind turbines and a container shipment costs to India are approximately 1000 e/ container. (MyPower Finland, 2009) The transportation costs will add to the price of the product approximately 2 %.

In case the company exports the wind turbines from Finland and installs them in India making a power purchase agreement with the customer, and the ownership of the turbines stays at the case company, there are significant duty reliefs from the government of India. The concessional custom duty of 5 % on 5 specified wind turbine components and their parts, these include wind operated electricity generators up to 30 kW and wind operated battery chargers up to 20 KW and parts of wind operated electricity generators for manufacturer/maintenance of wind operated electricity generators, namely: Special bearing, gear box, yaw components, wind turbine controllers and parts of those previously mentioned goods. Also the blades, parts of the blades and raw materials for manufacturing the blades and rotor on wind operated electricity generators. The wind operated electricity generator, its components and parts are also excepted from excise duty. The excise duty generally vary from 7 - 10 %.(Government of India, 2009)

4.6.4 Promotion

As is written in the theoretical part, promotion can be divided into advertising, personal selling, merchandising and publicity of the company and its products. Since small-scale wind turbines are still new in the markets in India, there is a strong overall need for promotion: both educating people about the facts and benefits and at the same time making the product attractive and creating a demand. Wind energy turbine manufacturers are not necessarily competing with each other so much as with the fact that consumers don't have enough knowledge about their products. The conventional ways of getting energy are ingrained habits with a long history in Indian society and changing those can take time. Wind energy is also competing against solar energy which sometimes is perceived as more credible source of energy than wind in India, although, the facts show that solar energy is generally more expensive energy compared to wind. In some cases local or government incentives have influenced the costs pushing down especially costs of solar power and affecting the competition. (AWEA, 2008)

The importance of renewable energy incentives and renewable energy and environmental issues in general is certainly on view in India at the moment. The

media in India and especially in Mumbai is making a lot of noise about renewable energy and all environmental issues weekly. During the three week stay in Mumbai, the researcher read and collected tens of newspaper stories about wind energy, renewable energy in general and other environmental issues related to the wind energy. Renewable energy is a hot topic in the international and local fairs arranged in India, it will be one of the main subjects at a technology summit between the governments of India and Finland on November, 2009. (Finpro, 2009) When Lahti Science and Business Park made an agreement with an Indian investment bank of cooperation in order to enhance business collaboration between the two countries, renewable energy was one of the core topics that the Indian partner brought to the discussions. (Lahti Science and Business Park, 2009) All over the world, wind energy is an intriguing subject at the moment and it offers the manufacturing companies a chance for positive, free promotion through articles and interviews and exhibitions, for example, for putting up a wind turbine for promotional showing at the marketplace in Lahti on June, 2009. Since the market is still new and immature, all the promotion, discussions in media and news are important to everyone in the industry - no matter whose turbine is in the pictures, wind energy in general is getting conspicuousness and acknowledgment. The fairs, like Renewable Energy India 2009 EXPO and Power India 2009 are excellent opportunities to network and meet important stake holders and operators in the industry. These are good places for meeting partners, investors and presenting your technology to the markets.

Because of the investment costs and needed expertise in assembly and installation of the wind turbines, the sales have to be done directly to the endusers or through trained distribution channels like specialist dealers. Planning and training of the sales personnel is very important. The sales process should include the same phases and offer the same benefits and facts about the product, no matter where it happens. In Finland, the company has created a strategic plan for marketing and sales in cooperation with a marketing communication company. (MyPower Finland, 2009) The case company has defined two main customer segments in Finland: the owners of summer cottages/summer houses and the owners of

houses. Additionally they have formed three levels of marketing strategies: One for their own sales organization, subcontractors, one for the distribution channel and one for the end users. The first two would be provided with a sales plan and training and the third group would be addressed through promotion and advertising aiming for growing the brand awareness.

In India, they could also separate the marketing strategy so that they have three groups: their own sales personnel, dealers and consumers. The first two groups, sales and dealers need training and package of marketing material, tutored sales process to operate and for the consumer target group, their objective is to grow brand knowledge, positive image for wind turbines and the brand, awareness of the benefits and purchasing methods and designated dealers. Then again, they have to alter the marketing material according to two different messages: offering a wind turbine compared to offering electricity through power purchase agreement.

The case company has very European - even Nordic style in their current marketing material and design on their web pages. For Indian markets, they will need to adapt the design and pictures so that the Indians can relate to the marketing message. Although Finnish technology and brand has benefits in India, the credibility of the features, production capacity and functionality of the turbines in India has to be proven and shown in the pictures and the marketing material. They need localized web sites and testing results as well as pictures of the product in India.

India has very popular and highly operative media, TV, radio and newspapers are all well spread and offer good coverage of consumers. Production costs for audiovisual material and web design are cheap compared to the Finnish prices.

4.6.5 People, process and physical evidence

The relevance of the three additional P's in the marketing mix are maybe not controversial but somewhat more layered and overlapping than the first four P's. The researcher believes that processes and physical evidence are already handled partly when thoroughly looking at the product and place strategies. In some cases

the separate handling or further discussion of those issues might be relevant, but mainly because of the limited time of this study, they are not discussed separately. When the case company starts operations in a foreign country the importance of well planned processes for sales and communications will be very relevant issue and would need further research.

People are always important and crucial especially in the B2B marketing where the personal and organizational skills, "tool packs" of the sales personnel and standardized sales methods and buying experience can make a big difference. This is not only a concern of the marketing department or how the marketing material is planned but a concern of the whole organization and it is a team effort to make the material and instructions and to train all the people in the customer service so that they share the same objectives and standards. The researcher also believes that when people can learn and participate in the planning of their work, they are more committed and inspired.

In the following two figures the researcher has formed two marketing mix choices, one for each product.

PRODUCT: 4 kW Wind Turbine

CORE FEATURES:

- Patented, extra durable blades and shell for generator
- Low maintenance needs
- No cut-out wind speed
- Annual output estimated to 14.000 - 16.000 kWh
- Directly heating houses, battery charging and feeding to the grid
- MyPower brand from Finland
- Design product - aesthetically pleasant, steel-gray coloring
- Environmentally friendly - no CO2 emissions
- Extremely silent

Place / Distribution Strategy

- Starting a JV in India to operate the marketing
- Training of some specialist dealers, sales organization
- In the first phase exporting the turbines from Finland
- Arranging own assembly and installation network /training of experts for after-sales services at the same time

Price Strategy

- Market prices in India vary from 5.000 - 7.000 € for similar products
- Market entry with a little bit higher price than the average market price
- building a high technology brand image
- Offering shorter payback period due to energy production capacity
- Targeting commercial users who value the environmental status of the products

Promotion Strategy

- Participating in the industry fairs and expo:s
- Marketing actively to increase the awareness of the consumers through carefully chosen channels
- Direct sales to the main target groups
- Localized marketing material: brochures, website and advertising.

People

- The sales organization should be very committed and well trained
- Project sales skills important
- Sales commissions would be used as incentives

Figure 20. Marketing mix for direct sales of wind turbines.

PRODUCT:

Setting up windfarms, selling the produced electricity (PPA)

CORE FEATURES

- Indefinite number of turbines at the customers site or nearby windfarm
- Making an agreement for purchasing of the produced electricity for specified period of time with fixed tariff
- No financial risks for the customer - no capital costs
- Environmentally friendly - no CO2 emissions
- Extremely silent

Place / Distribution Strategy

- Starting a JV in India to operate the marketing
- Training of some specialist dealers, sales organization
- In the first phase exporting the turbines from Finland
- Agreements with assembly and installation partners

Price Strategy

- Market prices are set by the state electricity tariffs and demand
- Targeting those commercial consumers who suffer from shortage of supply of energy - higher prices
- In Mumbai the fixed tariff for wind energy is 3.50 INR/kWh if selling through a private or state owned energy company

Promotion Strategy

- Participating in the industry fairs and expo:s
- Close communication with state and local officials for finding suitable locations for wind farms
- Marketing actively to increase the awareness of the consumers
- Direct sales to main target groups
- Localized marketing material: brochures, website and advertising

People

- The sales organization should be very committed and well trained
- Project sales skills important
- Sales commissions as incentives

Figure 21. Marketing mix for power purchase agreements (PPA).

4.7 Recommended business model and marketing strategy

The case company has no previous business operations in India nor in Asia. They are still developing their business model in the European markets and they are open to all possible business models and entry modes in the new markets:

exporting, starting a subsidiary in India, starting joint venture, starting marketing and licensed production or possibly also their own production in India.

Considering the size of the company and the fact that they have very recent R&D period burdening the financial situation of the company, a joint venture would be recommend option. Through a joint venture they can get a possible Indian investor to take responsibility of part of the costs and, at the same, time gain important knowledge of the markets. Joint venture and its target area can be limited to certain parts of India and there can be two or three joint ventures or different kinds of cooperation partners in India to cover the whole market.

They also have two clear strategic choices they can use:

1. Directly selling of the wind turbines.
2. PPA (power purchase agreement), investing on the wind turbines themselves and making a purchase agreement with the customer/customers of the produced energy with a fixed price for fixed time period.

Strategically and specially based on the long-term profit calculations, the option of PPA is more profitable to the company. On the other hand it holds bigger financial challenges to get started with. The researcher's recommendation would be to gain some more knowledge and test results from the India markets by selling the first projects and pilot wind turbines or wind farms directly to the customers. Then after collecting the references and test data from the markets they should investigate and negotiate the financing possibilities. They could use sources such as Finnpartnership funding for getting the marketing, pilot projects and testing started in India. Finnpartnership program can provide the Finnish companies a 50 % support for the projects which aim at establishing a business in a developing country, such as India. In the next phase when the company is ready to implement

the PPA strategy, they can get financial aid from Finnfund, which provides long-term risk capital for profitable projects in developing countries.

Figure 22. Business model proposal for the case company.

4.8 Summary of the analysis

The purpose of this study in India was to establish the feasibility and the market potential of the small-scale wind turbines in the Indian markets, concentrating in the urban areas of Mumbai. The objective was to determine a marketing strategy to enter the markets. The study shows, that there is enormous potential and the demand for electricity and, at the same time, the small-scale wind turbines can benefit from various government and local incentives offered for renewable energy producers. The regulations and fixed tariffs are also favorable towards the growth of wind energy industry in India. As has already happened with the case company, they are receiving inquiries from India and the interest of investors and government officials seem quite high for wind farm projects. The gap between the demand and the existing supply and the pressure for higher percentages of energy being produced from renewable sources are all in all increasing the demand, making sure that the wind energy projects are welcomed to India. Already 10 out of 28 states in India have set up a fixed tariff for wind energy, among them, the state of Maharashtra, which capital Mumbai is. India is also striving for renewable energy standard, RES policy following the model from western countries, and has set up a policy that by the year 2012, 10 % of the energy generation should be from the renewable sources. (MEDA, 2008)

The SME sized commercial consumers show huge potential for the wind energy, and outside the original scope of this research also the telecommunication towers and non-profit organizations can be pointed out as one of the most potential target segments.

The field study was successful and gave a good picture of the markets, especially meetings within the operators inside the industry in Mumbai were highly useful. The only problem was getting connection with the local officials. According to this experience, it is useful to find connections and start cooperation early before

traveling to India, in order to get meetings with the local officials. The researcher tried to get in connection with the local universities but, unfortunately, the universities and institutes were closed for a holiday period while the field study trip took place. Meetings with local officials and people in the administration level are hard to arrange without some recommendations from, for example, Finpro, Finnish Embassy or some local university. So for further research, it can be recommended to contact a local university and set up a meeting with someone who is teaching or is in charge of the research close to your study subject. It also helps to have a letter of recommendation with you from the Finnish university. The analysis phase has taught new important issues and the researcher has been able to get information for the missing parts also after the field trip by contacting some of the interviewees through emails and phone calls and also had some new contacts after arriving back to Finland.

A great help in analyzing and evaluating the relevance and functionality of the findings in real life has been the possibility to cooperate with the case company and participate with their negotiations with the potential investors from India. This has given the researcher an opportunity to test the validity of some parts of the analysis and conclusions. The researcher has also been working as a contact person between the case company and the Indians after they returned to India and started their own research on issues and test marketing of the products. The discussions with them and cooperation has strengthened some of the perceptions and ideas that had formed during the study about the markets.

5 CONCLUSIONS

Small-scale wind energy is, with no doubt, one of the most intriguing subjects in today's environmental and cleantech business - both urban and rural solutions of wind energy. In India, there are huge opportunities in the area of urban small-scale wind but the whole industry and the technologies are still only at an early introduction phase. The challenges are yet multiple: lack of experience and test results of the operational reliability, lack of test results of the production capacity, the question marks concerning the durability of different parts and materials especially over long time period and in variable conditions are still to be solved. It will take continuous and unyielding efforts of stimulations, testing and creating standards for measuring the windmills to grow the industry's economies of scale.

The challenges are quite similar among the small-scale wind turbine manufacturers and marketers, because they are mainly small and medium sized businesses carrying a big R&D load and struggling with all the same problems: Finance of the growth of their companies and the growth of the production capacity and the lack of marketing resources. Most of the companies have difficulties in the marketing phase when the needed knowledge of the markets and conceptualization of the products cannot be acquired into the company, and in too many cases, the marketing strategies are built inside the company with the same knowhow and resources as the product development was completed. Lack of marketing resources leads too many times to failure in the final output - the commercialization of the technology innovation.

Even though there are challenges, the industry of small-scale wind energy shows promises and values to the society that cannot be dismissed and those things will lead to a pressure from governments towards solving the problems in order to meet the growing demand for new ways of using renewable energy sources. In India, like in many other countries, the government is issuing development plans and incentives to encourage renewable energy production and to reduce the carbon dioxide emission. People's awareness of environmental issues is growing, and partly because of that, the demands for companies' efforts towards sustainable

and environmentally friendly way of operating are growing as well. A small-scale wind turbine is a new promotion method for companies, and compared to a neon sign on the rooftop or TV commercial, the only one that actually literally pays itself back in time by producing energy.

How the markets will develop, in India, is hard to predict, but one thing is for sure: New competitors emerge all the time. All companies in the markets are still using the direct sale of the turbines and in most of the cases all the projects are still, at least nominally, pilot projects due to the reason that the companies still collect results and data. The first company who fulfills the requirements to show reliable test results and data from, for example, stimulation tests can conquer a big market share. The question will remain: How will they manage financing the efforts to enter the markets with a professional marketing plan and processes?

To summarize the key findings of this study:

- The market in India has huge potential, which comes through both energy deficit and the high prices that commercial consumers pay especially in certain locations.
- SME companies need for back-up energy, mainly diesel generators, is continuous and has become a truism.
- Core values from the customer point of view are cost efficiency, uninterrupted supply of energy and environmental values.

How do these findings affect the chosen strategy: The SME companies and the pointed main target segments would benefit from an additional, stand alone, energy source to fulfill the times of blackouts in the main grid. The marketing should be targeted into specific areas and industries which suffer most from the power cuts and high prices, this way the payback time of a wind turbine is no longer a hindrance of sales. Power purchasing agreements can be seen as the new, attracting strategy for the small-scale wind energy, especially in the developing countries this strategy could be very potential also from the point of view of funding and government's incentives. It opens up possibilities to offer environmentally friendly, CO₂ emission free energy for even the non-profit organizations and other institutions who could not financially afford the change themselves.

This study opens up questions for further research. The research problems can be divided into two categories: One issue concerning the technological challenges and the other concerning the markets in India. The technological research questions would be: How to standardize the product and what development needs there are and what kind of testing is needed before the products are truly ready for a large scale commercial launch? The research questions from the marketing point of view would be: What kind of marketing plans and processes are the competitors using and how to build a successful logistical strategy and supply chain for the chosen business model?

In addition, out of the scope of this research, an interesting problem field came up: The new technology innovations and their difficulties on their way to commercialization. What are the typical difficulties and mistakes that occur and conclude in some innovations never succeeding in commercialization, and what is the difference in the development process and marketing efforts if compared to innovations that succeed in it?

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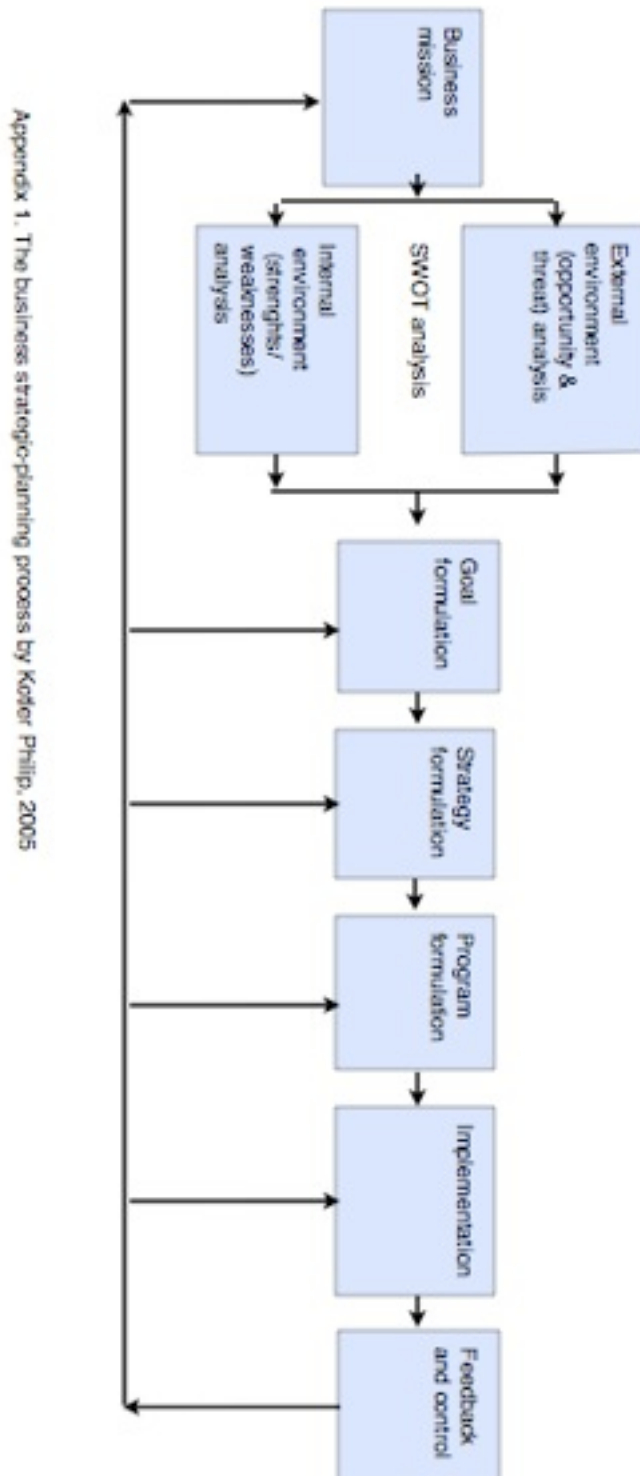
Tekla India Pvt. Ltd, Manager - HR & Admin Preeti Bakshi, interviewed at Millenium Business Park in Navi Mumbai, 19th May, 2009

Tipco Industries Ltd, Executive Director - Finance, Balde Garhwal, interviewed at the Orchid Hotel in Bandra Kurla at 25th May, 2009

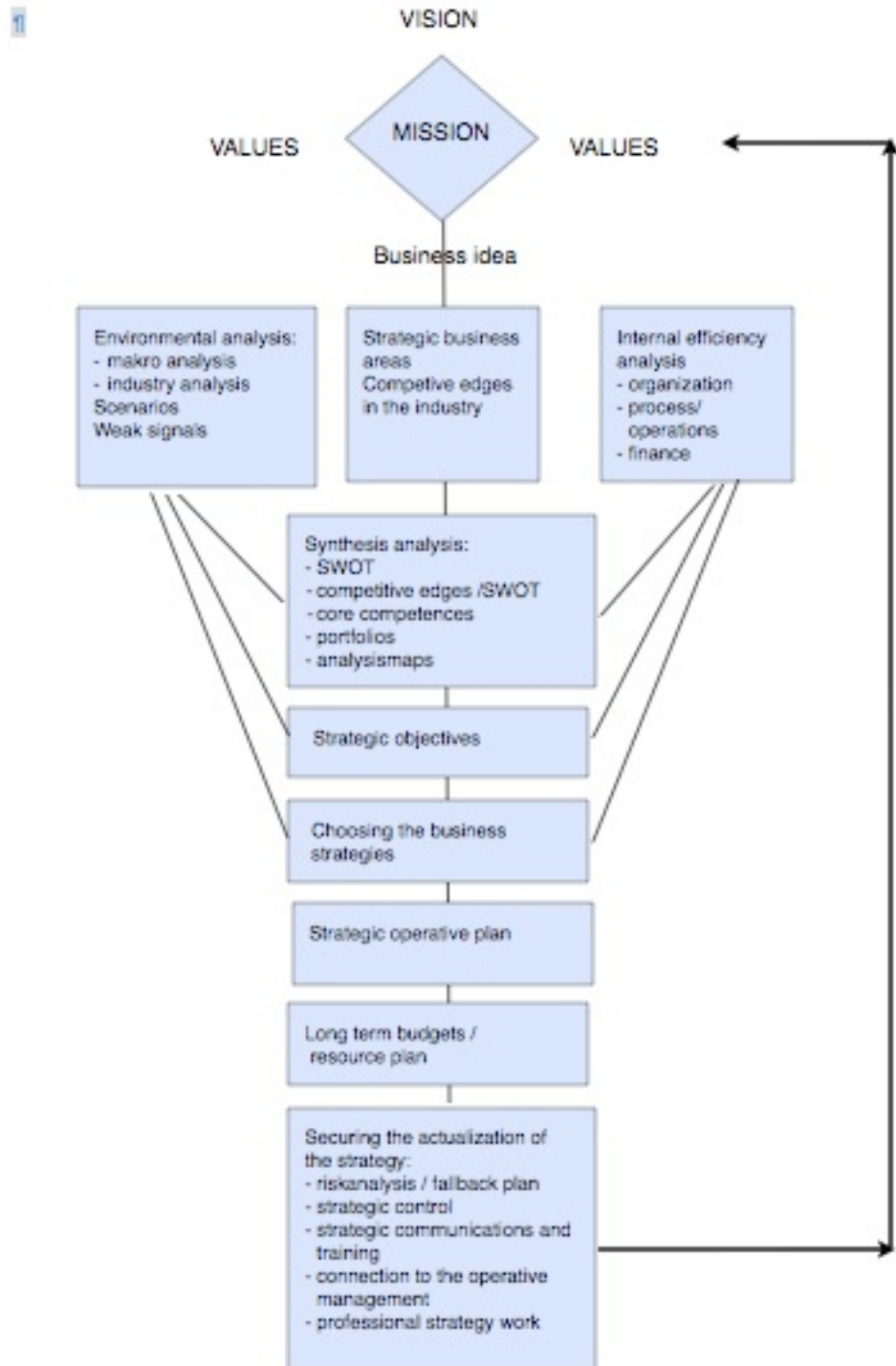
Woodland Store, Shop Manager, interviewed at Woodland Store in Belapur at 1st June, 2009

APPENDICES

Appendice 1. The business strategic-planning process by Kotler Philip, 2005



Appendice 2. Corporations strategic architecture by Kamensky Mika, 2008



Appendice 3. Questionnaire for interviews of the potential customers.

Questionnaire for interview / Nina Harjula

nina.harjula@adpriori.com

Company name:

Name and title of the Interviewee:

Time and Place of the interview:

1. Please state what is your position (job description) in the company?
2. How long have you worked in this company? _____ (months / years)
3. How long have you worked in this industry? _____ (months / years)
4. How would you describe your role in the decision making in buying energy source / form in your company?

I make the decisions myself / is there a limit of purchase that can be done by individual?

I am part of the decision making process / team - who are in the team?

I know the process well and sometimes participate in it - what kind of decisions have been participating in lately?

I am not part of the process but I am familiar with the process / is it a clear process?

5. What energy source / sources are your company using at the moment?

(If there is a backup system, mark 1. for the primary and 2. for the secondary system)

Electricity (main grid)

Petrol/ diesel

Solar power

Wind energy

other, what _____

6. Next there is a list of statements regarding to the energy and its importance to your company.

1. Totally agree
2. Partially agree
3. Neither agree or disagree
4. Partially disagree
5. Totally disagree

a.) It is important that energy is always available and secured.

1 - 2 - 3 - 4 - 5

b.) Possible power cuts don't really have any influence on us.

1 - 2 - 3 - 4 - 5

c.) We have a back up system to cover for the power cuts.

1 - 2 - 3 - 4 - 5

d.) We are willing to invest in new technology to avoid the power cuts.

1 - 2 - 3 - 4 - 5

e.) We are open to new energy forms.

1 - 2 - 3 - 4 - 5

f.) It is important that the energy source is maintenance free.

1 - 2 - 3 - 4 - 5

g.) It is important to us that we can use renewable energy.

1 - 2 - 3 - 4 - 5

7. How much does your company use energy per month ? _____ units (kWh)

8. How much is the company's energy bill per month? _____ INR

(Confirm is the figure exact from a bill or the persons estimate? _____)

9. Have your company ever been offered a wind energy turbine or wind energy in any way?

Yes, by what company / what happened / why was it a good deal, bad deal

10. If your company could be self-sufficient in energy, not depending on the main grid, would you find that interesting option?

Yes, why ? / No, why?

11. How does your company find out about new energy sources and /or suppliers?

12. Would your company be interested in receiving an offer of a wind turbine that could be installed to serve only the company?

OPEN DISCUSSION ISSUES:

To understand how your company makes decisions about buying energy, can you explain the purchasing process.

(Supporting questions:)

- Is there a key supplier or does the company use several?

- Are the suppliers active in marketing or does the company itself take initiative?

- What would be the recommended supplier in the area?

- How many offers do you ask before making a decision?

- If there is an investment decision involved (cost of a wind turbine), how is it approved in the company?

- What is the most important criteria when choosing a energy source?

Appendice 4. Questionnaire for interviews of the stakeholders.

Questionnaire for Interview / Nina Harjula

Company / Office or Authority:

Name and title of the interviewee:

Time and place of the interview:

1. Can you tell something about your role and responsibilities in this organization?
2. How is the organization /institute you represent involved with energy / renewable energy / energy decisions in Mumbai/ India?
3. What is your experience of wind energy or small-scale wind turbines in your profession?

OPEN DISCUSSION ISSUES:

To help me to form an understanding of the environment and the regulations of wind energy markets in Mumbai and India in general, can you explain what are the challenges and important regulations that wind turbine producer meets in this market?

(Supporting questions)

- How is the energy production regulated in India?
 - Do you think it is easy to enter the energy markets in India?
 - What regulations are there concerning producing and selling energy?
 - Can any company install a small-scale wind turbine on their yard or on the roof of its building?
 - Can you tell something about the incentives for the production or usage of renewable energy forms in Mumbai?
 - What are the price levels of energy in Mumbai - for commercial customers?
 - Is there variation in the prices according to location or other factors?
 - What is your opinion of the current power supplies and their sufficiency?
-

Appendice 5. List of the central incentives by Government of India according to the Wind Power India (2009).

CENTRAL INCENTIVES	
A. Indirect Taxes	
I. Custom Duty for Wind Energy Equipments and Components (Notofication No.21/2002-custom dated 01.03.2002, as amended by Notification No.11/2006 customs dated 01.03.2006)	
Description of Goods	Rate
i) Wind operated electricity generators upto 30 kW and wind operated battery chargers upto 30 kW	5%
ii) Parts of wind operated electricity generators for manufacturer/maintenance of wind operated electricity generators, namely :	
a) Special bearing	5%
b) Gear Box	5%
c) Yaw components	5%
d) Wind turbine controllers	5%
e) Parts of the goods specified at (a) to (d) above	5%
f) Sensors	25%
g) Brake hydraulics	25%
h) Flexible coupling	25%
i) Brake calipers	25%
iii) Blades for rotor of wind operated electricity generators for the manufacturers/maintenanceof wind operated electricity generators.	5%
iv) Parts for the manufacturer/maintenance of blades for rotor of wind operated electricity generation	5%
v) Raw materials for manufacturer of blades for rotor of wind operated electricity generators	5%
Conditions :	
(a) If the importer at the time of importation furnishes in all cases, a certificate to the Dy. Commissioner of Customs or Assistant Commissioner of Customs as the case may be, from an officer not below the rank of Deputy Secretary to the Government of India in the Ministry of Non-Conventional Energy Sources recommending the grant of this exemption and in the case of the goods at (ii) to (v) the said officer certifies that the goods are required for the specified purposes; and	
(b) Furnishes an undertaking to the said Dy. Commissioner of Customs Assistant Commissioner to the effect that -	
(i)	in the case of wind operated electricity generators upto 30 kW, or wind operated battery chargers upto 30 kW, he shall not sell or otherwise dispose off, in any manner, such generators or chargers for a period of two years from the date of importation.
(ii)	in case of other goods specified at (ii) to (v), he shall use them for the specified purpose, and

(iii)	in case he fails to comply with sub-conditions (i) or (ii), or both conditions, as the case may be, he shall pay an amount equal to the difference between the duty leviable on the imported goods but for the exemption under this notification and that already paid at the time of importation.	
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II. Excise Duty [Notification No.6/2002 dated 01/03/2002 (S.No.237 non-conventional devices/systems)(Notification No.6/2006 C.E. Dated 01/03/2006)]

Devices/Systems exepcted from Excise Duty:

(i)	Wind operated electricity generator, its components and parts thereof including rotor and wind turbine controller.	
(ii)	Water pumping wind mills, wind aero-generators and battery chargers.	

III. Sales Tax

Exemption/reduction in Central Sales Tax and General Sales Tax are available on sale of renewable energy equipment in various states.

B. Direct Taxes

1.	Accelerated Depreciation benerit u/sec. 32 Rule 5 up to 80% of the project cost in the first year plus additional depreciation @ 20% for projects being commissioned after March 2005 with new plant & machinery.
2.	Exemption on Income Tax on earnings from the project u/sec. 80 IA for 10 years.

Appendice 6. Statistics of wind monitoring stations from Maharashtra state.

(source: Wind Power India)

Station	District	Mean Annual Wind Speed (m/s)	Mean Annual Wind Power Density W/m ²	
			Measured at 20/25/30m	Extrapolated/ Measured at 50m
Alamprabhu Pathar	Kolhapur	5.54	164	224
Amberi	Satara	6.21	237	275
Aundhewadl	Nasik	6.39	295	>295
Brahmanwel	Dhule	6.24	278	324
Chakia	Nandurbar	6.40	242	323
Chalkewadl	Sathara	5.45	206	218
Dhaigaon	Sangll	5.72	216	260
Dongerwadl	Sangll	5.78	179	284
Gawalwadl	Nasik	5.13	140	278
Gude Panchaqani	Sanqll	5.35	178	296
Kankora	Aurangabad	5.40	127	204
Kas	Satara	5.54	194	277
Kavadya Donger	Ahmed nagar	6.26	224	277
Khandke	A'nagar	5.29	146	250
Kolqaon	Ahmed nagar	5.54	177	238
Lonavla	Pune	4.19	122	285
Mander Deo	Satara	5.24	153	206
Matrewadl	Satara	5.62	211	253
Panchpatta	Ahmed nagar	5.54	201	236
Panchaqanl	Satara	4.97	133	205
Ralpur	Dhule	5.10	162	214
Palsl	Satara	5.09	137	254
Sautada	Beed	5.72	167	223
Takarmaull	Dhule	5.62	186	224
Thoseghar	Satara	5.86	229	>250

Station	District	Mean Annual Wind Speed (m/s)	Mean Annual Wind Power Density W/m ²	
Vljayadurg	Sindhudurg	5.29	207	253
Vankusawade	Satara	5.72	231	293
Varekarwadi	Satara	5.68	204	216
Vaspet	Sangll	5.65	170	225
Bhud	Sangll	5.48	160	224
Rohina	Latur	5.57	149	226

Appendice 7. Electricity Tariffs of Reliance Energy Ltd: Infrastructure -
Distribution consumers effective from 1st June, 2009

Consumer category & Consumption Slab	Tariffs	
	Fixed / Demand charge	Energy charge (p/kWh)
LOW TENSION CATEGORIES		
LT I : LT Residential - SPL	Rs. 3 per month	0,40
LT I : LT Residential		
0-100 units	Rs. 30 per month	2.96
101-300 units	Rs. 50 per month	5.56
301-500 units	Rs. 50 per month	9.16
above 500 units	Rs. 100 per month	10.61
LT II : Low Tension Non-residential or commercial		
0-20 kW	Rs. 200 per month	7.95
> 20 kW and < 50 kW	Rs. 150 per kVA per month	10.26
< 50 kW	Rs. 150 per kVA per month	10.91
LT III : LT - Industrial upto 20 kW	Rs. 200 per month	7.76
LT IV : LT - Industrial above 20 kW load	Rs. 150 per kVA per month	7.41
LT V : LT - Advertisement & Hoardings	Rs. 200 per month	17.66
LT VI : LT - Streetlights	Rs. 150 per kVA per month	8.31
LT VII : LT - Temporary supply		
LT VII (A) - Temporary supply religious (TSK)	Rs. 200 per connection per month	3.81
LT VII (B) - Temporary supply others (TSO)	Rs. 200 per connection per month	15.81
LT VIII : LT - Crematoriums and burial grounds	Rs. 200 per connection per month	3.81
LT IX : LT - Agriculture	Rs. 15 per HP per month	0.8
HIGH TENSION CATEGORIES		

HT I : HT - Industry	Rs. 150 per kVA per month	7.56
HT II : HT - Commercial	Rs. 150 per kVA per month	8.41
HT III : HT _ Group housing society	Rs. 150 per kVA per month	5.16
HT IV : HT - Temporary supply	Rs. 200 per connection per month	11.00
TOD Tariffs (in addition to above base tariff) will be charged compulsory in Low Tension categories for LT II (B) and (C), and LT IV category, and optional for LT II (a) and LT III and compulsory in High Tension categories for HT I and HT II		
0600 hours to 0900 hours		0.00
0900 hours to 1200 hours		0.50
1200 hours to 1800 hours		0.00
1800 hours to 2200 hours		1.00
2200 hours to 0600 hours		-0.75