

MARKET ENTRY MODE FOR SOLAR AND
WIND ENERGY BASED ON MARKET
ANALYSIS FOR PROSPECTIVE FINNISH
COMPANIES

Target Area: Rawalpindi and Islamabad, Pakistan

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ABSTRACT

The purpose of the research was to find the most appropriate market entry mode for the prospective Finnish solar and wind energy companies based on the market analysis. The research was focused on analyzing the market of two cities, Rawalpindi and Islamabad, Pakistan. In order to understand and analyze the solar and wind energy market of the two cities, this research focuses on the following questions: 1) what is the suitable strategic foreign market entry mode, 2) what is the current situation of solar and wind energy situation, 3) how to evaluate the competitive forces and the renewable industry of solar and wind energy, and 4) what are the main environmental factors considered for the solar and wind energy companies in selecting cities of Rawalpindi and Islamabad? The study is based on analysis of the qualitative data obtained through in-depth interviews with the main target groups including the renewable energy companies, Chamber of Commerce Rawalpindi, real estate developers and Alternative Energy Development Board.

Based on the market analysis, it was found out that both the two targeted cities are full of solar energy generation potential, based on their geographical location. Only few local companies are dealing in the solar energy backup solutions in both the targeted cities. Due to lack of technology and manufacturing facilities within the country all the companies are importing the solar energy solutions. Due to lack of awareness, highly priced imported solar energy solutions, currently the residents of the two cities are using affordable non-friendly backup solutions. Any Finnish solar technology companies can enter this highly potential market of two cities using the joint venture mode with the local partner to perform manufacturing. Low priced products and extensive marketing of the solar energy solutions will be the key to target larger middle and high income residential populations of the two cities. Residential customers are heavily suffering from the electricity shortage and currently relying on the non environmental friendly backup solutions.

Key words: Market entry modes, solar and wind energy, external environmental factors, competitive forces, market phases, Rawalpindi and Islamabad, Pakistan.

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1 INTRODUCTION

1.1 Background

Energy has always played a significant role in human economic and cultural development. Different sources of energy have been used to fulfill their needs over human history. Particular devices were made to get benefit from these energy resources either available as fossil fuels or renewable type. The macroeconomic development over the decades puts enormous pressure on the precious fossil fuels in the global market. This has not only increased the prices but also raised concern over the global climate. (Sen 2008.)

Reliable energy supplies are essential in all the economies for different ends such as lighting, heating, communication or industry etc. The developed economies spend 5 to 10 percent of their national income on energy. However the developing economies spend a larger portion of their national income to fulfill their energy needs by importing the energy. Due to the industrialization and the growing population in the developing economies, sustainable efficient energy generation option will be required to meet the growing energy needs. More emphasis has been given on the renewable energy options especially by the developed nations due to adequate availability of resources. These renewable energy resources are more compatible and environment friendly than the fossil fuels. (John, Anthony & Tony 2005.)

During the oil crises between 1973- 1976, unexpected increase in the oil prices not even affected the poor economies and the developing countries. But it did adversely affect the economies in the developed nations of the world. Due to the oil crises, the developed countries at first started looking for different ways how to save energy, Along with that they start of a search for renewable energy sources to reduce heavy dependence on the oil as main source for energy. It sparked thinking to

preserve nature and oil resources for future energy needs. They accelerated search for the technologies to capture and to utilize these natural resources for their increasing energy needs. (Carr 1997.)

According to the Renewable Energy Policy Networks (Global Status Report 2009.), the industrialized countries like USA, Germany, China, Japan, Finland, Sweden, Spain and many others are leaders in the renewable energy sector. They have gained self-reliance for their high energy demand through their advancement in the renewable technology. They are doing investment to further enhance this climate-friendly technology in order to utilize the renewable energy resource and to reduce reliance on fossil fuels. However, according to the Renewable Energy Potentials Report (2007.), the world's large economies have the potential to generate half of their electricity generation by 2050 from renewable energy sources.

An industrialized country such as the UK focuses on reducing the use of fossil fuel for their electricity generation. They are using all sorts of wind turbines to generate electricity energy onshore and offshore. More homes and businesses are generating their own clean electricity due to the decrease in technology prices. Furthermore, according to the British Wind Energy Association (BWEA 2009.), nearly 2 million homes and business are getting benefits from the small wind turbines. An 80% increase in the small wind turbines deployment in 2007 as compared to 2006. This shows their commitment to use more clean electricity options for their growing needs. The UK is generating 8 % of the electricity from the micro and small wind turbines.

Solar power is another popular energy option used and promoted by the government of the United Kingdom. Solar energy solutions are used for water heating and backup for the house-hold appliances. Depending upon the level of capital investment, payback period is normally medium to long term. (National Energy Foundation, 2009.)

The use of small wind turbines is very popular in the western world like US and Europe. According to the American Wind Energy Association (AWEA 2007.),

global small wind turbine market study shows that over 7000 small wind turbine units were sold only in the United States in 2006. Federal tax credit of 30% was the promoting factor which also increased the small wind industry to grow by 40%. Small wind turbine manufacturing is one of the leading renewable energy industries in the US, helping government to reduce reliance on fossil fuels for the electricity generation. AWEA is expecting to increase the wind energy contribution in total electricity supply of the country by 20% by the year 2030.

The prospects of solar energy utilization in Pakistan have considerable potential throughout the country. Pakistan receives high intense solar radiation due to its unique geographical and favorable location. Efforts made by the government of Pakistan were mainly focusing on remote villages in order to provide off-grid electrification to the residents. (Sahir & Qureshi, 2006.) Private and public organizations are trying to develop improved solar cells and technologies. Companies are dealing in low power gadgets such as photovoltaic lamps, solar cells, battery chargers and other related devices for electricity black outs (load shedding).(Chaudhry, Raza & Hayat, 2008.)

Wind is also another potential renewable energy option of Pakistan with an initial approximate electricity generation potential of 50 Giga watts in the country. Greatest potential areas lie in the wind corridor are in the province of Sindh and the coastal areas of Balochistan. Average wind speed ranges between 7-8 meters per second at a height of 65meters. (Stephenson & Tynan) No commercial wind farm has yet been in operation to get benefit from this resource. Recently in 2008, 6 megawatts of 50 megawatts projects have started its operation in the province of Sindh. (AEDB, 2009.)

Pakistan is a developing country which has recently started utilizing renewable energy resources, for its growing electricity needs. (Renewable Energy Global Status Report 2009.) According to the Alternative Energy Development Board of Pakistan (AEDB), Pakistan has an aggressive strategy to get 15 % of electricity from renewable energy mainly from the solar and wind energy solutions in order to narrow down the growing electricity supply and demand gap. Pakistan needs

substantial investment and advance technologies to explore and utilize the natural resources of wind and solar energy in particular. (Mirza, Ahmad, Harijan. & Ma-jeed 2008.)

1.2 Research objectives, questions and limitations

The main research objective is to conduct the market analysis for prospective Finnish solar and wind energy companies. This is important for the Finnish companies to know the appropriate market entry mode, current market situation, competitive forces in the market and the main environmental factors needed to be considered. The target area selected for this research is Rawalpindi and Islamabad, Pakistan.

The main research question

What is the suitable strategic market entry mode for Finnish solar and wind energy companies based on market analysis in Rawalpindi and Islamabad?

Other subsequent questions:

1. What is the current situation of solar and wind energy situation in Rawalpindi and Islamabad?
2. How do we evaluate the competitive forces and renewable industry for solar and wind energies in Rawalpindi and Islamabad cities?
3. What are the main environmental factors considered for solar and wind energy companies in selecting Rawalpindi and Islamabad cities?

This study focuses on two renewable energy options i.e. wind and solar energy only. This research will show the small wind turbine and solar energy potential in

only two targeted big cities i.e. Islamabad and Rawalpindi. This will not represent small wind turbine and solar energy potential in the rest of the big cities of Pakistan. This research does not focus on the environmental effects of solar and wind energy in the target cities.

1.3 Research approach

The research approach used for this study is qualitative, based on semi-structured open ended questionnaire. Face to face in-depth interviews were conducted with the target groups. The reason for this method was to analyze the market for the Finnish technology companies dealing in wind and solar energy solutions. Market analysis is considered important to find and recommend the most appropriate market entry mode for the prospective Finnish solar and wind energy companies.

Qualitative research was the most appropriate approach in order to analyze the market's external environment, the competitive forces and the market phases. This was further enhanced by the face to face in-depth interviews using the semi structured questionnaires with the selected target groups in the targeted cities. Time and place of the interview was agreed by visiting and getting appointment on phone with the respondents in advance. Questionnaires were handing over and the objective of the study research was explained before the interview.

In-depth face to face interviews allowed the respondents to share his or her personal and professional experience. It helped the researcher to ask additional questions to get better understanding, knowledge and information provided by respondents. If the information was not cleared to interviewer, it allows getting further explanations from the respondents right away. (Sekaran 2003.)

The target groups selected from both the cities were renewable energy companies dealing in back up energy solutions, Chamber of Commerce and Industries, Alternative Energy Development Board and real estate developers. This was considered

to be important to know current market situation and future prospects in solar and wind energy electricity generation in Rawalpindi and Islamabad.

The Renewable Energy Development Board was interviewed as this department is facilitating in the renewable energy sector in the country. They provide guidelines about the potential areas, governments' incentives and support, policies and other issues important to deal in this newly emerging industry.

The renewable energy companies of cities Rawalpindi and Islamabad were interviewed. This was considered important to find out their scale and mode of operations. Important environmental factors affecting their businesses and other issues need to be considered by a new entrant.

Department of Chamber of Commerce and Industries in the city was interviewed to know how they facilitate the current companies doing business in the market. It was also tried to find out how the department is beneficial and helpful for the new companies from abroad, willing to enter this market especially in the renewable energy business.

Real Estate Developers of the two cities were interviewed with the aim to find out their electricity needs. It was also tried to find out that whether they will be the potential customers of Finnish solar and wind energy companies for their electricity needs. Another reason was to interview them to know their current electricity supply situation and their willing and knowledge of wind and solar energy solutions.

Selection criteria used for the Real Estate Developers and companies dealing in renewable energy backup solutions was based on goodwill, financial strength, scale of operations and duration being in the relevant sector. It was considered important to interview those in the target groups who have the best knowledge in their respective field.

1.4 Theoretical framework

When firms operate successfully in the domestic market and have large resources, they desire to achieve same domestic growth and control overseas. Domestic success and strategy of the organization influences them to get involved in internationalization process. Even though managers accept that domestic market may be less risky than the international market, positive financial and other predictable market benefits influence organizations to choose the potential market overseas. (Burca, Fletcher & Brown 2004, 13-15.)

According to Doole & Lowe, a firm can enter the market depending upon the level of risk and control they intended to take. They have mentioned four main market entry modes depending on level of control and risk. An organization can choose the most appropriate market entry mode which suits their strategy. (1999.)

A firm's strategic move of internationalization involves initially the selection of the region or the territory and then analysis of concerned industry from the phase it passes through will give the firm a broader view of the current market size. This will provide the grounds for the scale of operations needed for their strategic decisions. (Lasserre & Schutte 2006, 35-37.)

Hollensen (2004, 102.) states that using Porter's five forces model as an analysis tool indicates the economies fundamental structure and the competition level among different stakeholders. Using this tool will help to determine the potential of the target industry. According to Lasserre & Schutte phase of the industry from which it is passing through will determine the scale of investment and risk that the new entrant will take. (2006, 197-198.)

During the internationalization, firms can do the external environmental analysis using different tools and techniques. It is consider an important technique or tool to identify opportunities and threats. SLEPT is a technique to analyze the external environment of which includes Social, Legal, Economical, Political and Technological issues. (Wilson & Gilligan 1997, 61.)

1.5 Structure of the research report

Chapter one presents the background to my study, followed by research objective, research questions, research limitations, theoretical framework, research method and approach.

In chapter two relevant theories are chosen in order to analyze the market for the prospective Finnish solar and wind technology companies. These includes the market entry modes based and the market analyzing theories includes the external environmental factors (PESTEL), Industry analyzing tools such as competitive forces and industry phases.

In chapter three, the research methodology and research context is presented. This chapter presents how the data was collected in order to find the answers for main research question and supporting research questions. Firstly the research purpose of the study is presented followed by research approach. Secondly the research strategy is examined followed by data collection, sample selection, data analysis and validity and reliability. Finally the research context will be presented.

In chapter four, market analysis is done firstly started with the current solar and wind energy market situation in the target cities. Secondly external environmental factors (PESTEL), industry competitive forces, renewable energy industry phase analysis will be presented. Lastly recommendations and business model will be presented based on the analysis.

In chapter five, summary of the whole study followed by conclusion based on the facts and recommendations for the proposed future study will be presented.

2 THEORY OF MARKET ENTRY

In this chapter relevant theories are chosen in order to frame the research questions. It starts with approaches to strategic foreign market entry modes. This will be followed by the external environmental factors, competitive analysis and market phase and conclusion of the chapter.

2.1 Market entry modes

According to Doole & Lowe, based on control and risk following are the market entry strategic modes as shown in figure 1 below (1999, 314).

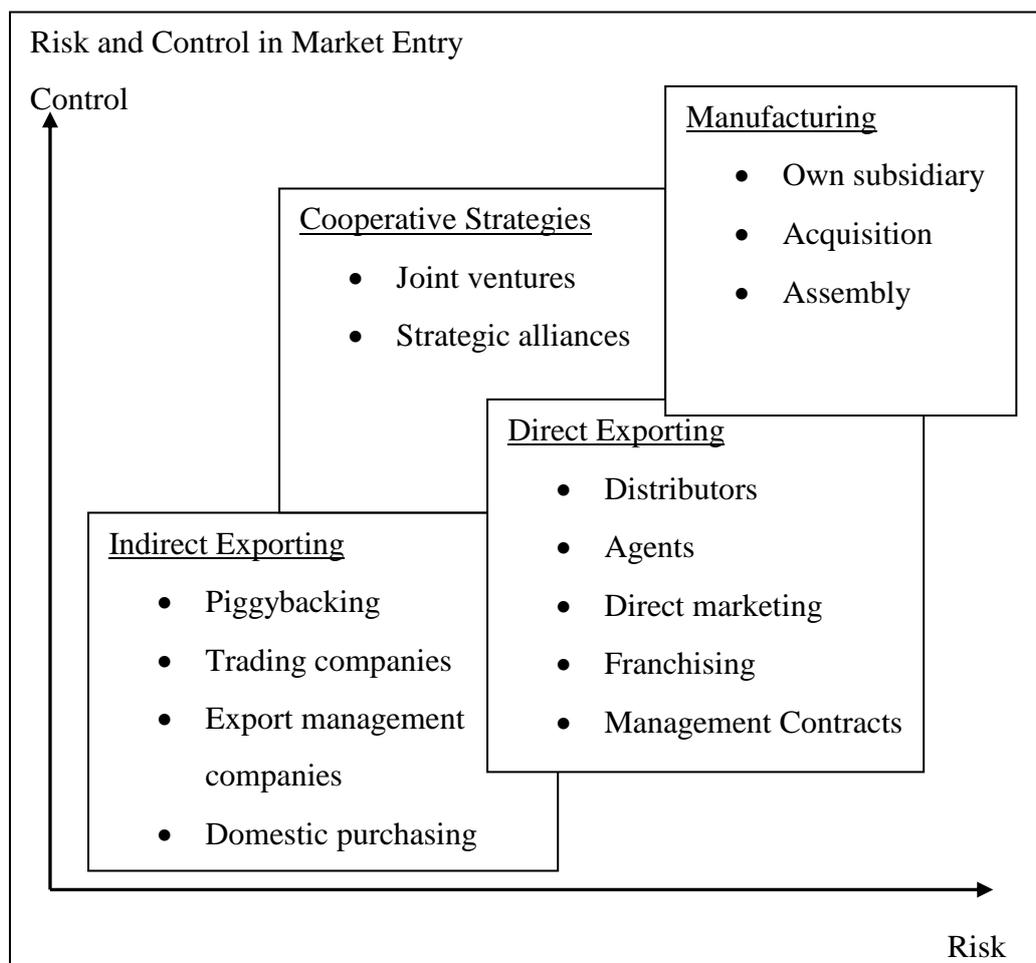


Figure 1: Market entry modes based on level of control and risk (Doole & Lowe 1999, 314.)

Control and risk levels are associated with the level of investment involved under different market entry modes. Control is the ability to influence the organization, methods of operation and decision making. Higher the control can be obtained through the greater involvement of the organizations resources in the foreign market. Higher the level of involvement and the control raises the risk associated with the level of investment.(Wickham & Wickham, 2008.)

Based on the different levels of involvement in the international market different market entry modes are; indirect exporting, direct exporting, cooperative strategies and foreign direct investment modes.

2.1.1 Indirect exporting

Indirect exporting market entry mode is normally adopted by the companies who have less capital and want fewer complications. Low level of risk is associated with this entry mode because the companies are not directly involved into the target market. The only disadvantage in indirect exporting is having less control over the entire sales operations. Indirect exporting includes four methods which are: piggybacking, trading companies, export management companies and domestic purchasing. (Doole & Lowe 1999, 315.)

Piggybacking is an established existing distribution networks of a country are utilized by new entrant for selling its products. The new entrant enters into an agreement with the existing company who has its own distribution channels. The piggybacking can be useful for the organizations in getting cheaper access to the new target market, economies of scale with regards to administrative, marketing, shipping and distribution. This method is beneficial for both the parties' as it generates revenue at both ends. (Keegan 2002, 270.) Disadvantages associated with piggybacking arrangement includes; lack of control over the entire decision making process and the performance of the local partner For longer term market presence as this mode of entry is not ideal for the foreign company. (Doole & Lowe 1999, 318.)

Trading companies can act as an important admirable agent for developing a trade link between the nations. They normally have vast experience of operations in most difficult countries and territories. They often offer the easiest route to success. Due to longer term commercial relations, they may have control over broader distribution network of the market. (Cateora & Graham 2005, 417.) An important aspect of their operations by selling one product and gets paid by taking a product in some other part of the market. This is facilitated by their vast operational network to find the buyer to exchange the products very quickly. (Hollensen 2004, 296.)

A trading company buys the products and acts as an agent. Trading companies provide a low cost and simple method of introducing the products in foreign market. As they operate in different country so that they work as investors, importers and manufactures as well. It also has a benefit of having little control over its activities as compare to the piggybacking activities. (Muhlbacher, Dahringer & Leih 1999, 458.)

Export management companies (EMC) are professional companies and acts as export departments for different companies. They facilitate in documentations, taking orders, transportation and distributions to small and medium sized companies to get access to the foreign buyers. (Keegan 2002, 269.)

EMC's deals with the range of products from a number of companies, spreading the cost over wider range clients and enjoy economies of the scale. Companies can get access to the foreign market for its products in less time and cost through EMC's as compare to with their own means of reaching the target market. (Hollensen 2004, 295.) Disadvantages entering using export management companies include; a manufacturer has very little knowledge and exporting experience of market, differences in strategic objective of EMC and the foreign company such as EMC promoting the products with short term revenue prospective however the foreign firm has longer term prospective and the EMC may also carrying the competitors products. (Doole & Lowe 1999, 316-317.)

Domestic purchasing is the modes in which the company itself has almost no involvement in selling the good overseas. The company not seems any potential in the target market and not considers it important to sell its products there. The company almost has no involvement in selling overseas. The buyer takes all the responsibility of buying goods from the company premises and sells to overseas markets. This method involves the least risks (financial and management planning) and at the same time resulting in the low revenues. The company often has limited knowledge of the market as the buyer approaches himself for the products. This results as the easiest mode of exporting. (Doole & Lowe 1999, 315-316.)

2.1.2 Direct exporting

Direct exporting gives more control over activities over the operations than indirect exporting mode. (Hollensen 2004, 298.) Doole and Lowe suggest moving from indirect marketing approach initially involves least market risk and gains the market experience as a market follower and then advances a more aggressive approach through the direct exporting. (1999, 320-321.) Clarke and Wilson mentioned two most popular entry modes under direct exporting strategy as agents and distributors. (2009, 205.) However according to Doole and Lowe, direct marketing, franchising and management contracts, agents and distributors under direct exporting modes. (1999, 320.)

A distributor is a merchant middle man who buys the product from the manufacturer, re-sells by adding its margin of profit to the end users. A distributor therefore bears all the risks and rewards as compared to an agent. (Cateora & Graham 2005, 421.) A distributor holds exclusive sales right in a particular territory and therefore works in close co-operation with the manufacturer. In this way a distributor is highly dependent on suppliers in its operations. The foreign company has the benefit by appointing distributor who is specialized in a particular product or market. (Hollensen 2004, 298.)

Using local distributor is a cheaper marketing option as compare to expanding internationally by establishing firms own marketing and distribution network. (Burca, Fletcher & Brown 2004, 392.) However, if the companies possess local distributors, who will not only gives more local presence and control. It also provides cost efficiency by using management resources and distribution efficiency of the distributor. (Keegan 2002, 279.)

An agent is usually the firm or individual doing operations in a foreign market. An agent is considered as quicker and cheaper foreign market entry mode. An agent is usually works on contract basis and gets a commission to obtain order for the products. There are number of suitable sources to find suitable agents in the target market are; Chamber of Commerce and industries, government's trade departments, potential customers and agencies etc. (Doole & Lowe 1999, 326-327.) According to Clarke and Wilson finding, selecting, inspiring and controlling the agents are the key issues in the internationalization process. (1999, 320.)

Disadvantages of an agent mainly includes; not loyal and motivated to one particular organization as an agent works for a number of organizations, lack of ownership rights lowers motivational level and performance, focuses only towards commission.(Muhlbacher, Dahringer & Leihs 1999, 461.)

Direct marketing includes selling goods and services directly to the end users by means of mail orders, telephone, catalogues, internet marketing and television marketing by using computer database. This mode eliminates the role of middle man bringing direct contact of customers with seller.(Keegan 2002, 461.)

Firms adopt direct marketing market entry mode when there are high entry barriers in the foreign market or where the distribution systems are not fully formed or inadequate. Other critical success factors involved in the direct marketing are standardization of products and the personal touch in communication. Information about the product needs to be available in the domestic languages to attract the

wide range of customers across the world. Data processing systems, credit controls and payment processing systems also need to be secured and sophisticated. (Doole & Lowe 1999, 330-331.) According to Clarke and Wilson, direct marketing is widely used in the developed countries. E-commerce system, distribution and communication channels are more secured than the developing world. Customers are more matured and confident in giving their financial and personal information for placing their orders using advance channels of communication available to them. (2009, 207-208.)

“Franchising is a mean of marketing goods and services in which the franchiser grants the legal right to use branding, trademarks and products, and the method of operation is transferred to a third party – the franchisee – in return for a franchise fee.” (Doole & Lowe 1999, 329.)

Under franchising agreement, franchisee delivers its human skills and capital resource, whereas franchisor provides administrative support in running operations. The franchiser uses its centralized system to coordinate advertisement and supplies to all the franchisees and sub-franchisees. (Hollensen 2004, 314.) Furthermore, under the relationship, franchisor grants the franchisee to use the trademarks. (Clarke and Wilson 2009, 211.) The franchisors receive an upfront fee or continuing franchise fee based on the turnover. The franchising is rapidly increasing strategic market entry mode with least capital investment required to expand the business in potential target country. Due to less capital cost involvement this mode of entry involves low risk factor. This is a favorable mode of entry used by the small companies to expand their operations overseas. (Muhlbacher, Dahringer & Leih 1999, 464.)

The management contracts are a typical example of internationalization of management services which are considered as saleable commodity. Selling the skills, expertise and knowledge of an organization in an international context is the basic idea. By installing the management operating systems and training of the local staff in order to take control the operations when the contracts will be completed

and operational. Management contracts are a sophisticated form of arrangements involved in training of the local managers and staff. (Clarke & Wilson 2009, 212-213.)

Market entry mode using management contract is attractive for the developing countries, which are aggressively looking for advance technologies, skills and expertise to do development. These contracts are considered economical for the developing countries that want the investor to build and run the construction. Take all the risk for a specified period, train the workers for a fee and hand over the contract. These contracts are often called as turnkey contracts. (Muhlbacher, Dahringer & Leih 1999, 465.)

2.1.3 Cooperative strategy

There are different terms used to describe the cooperative strategies which exist between the companies in order to reach for a common goal. These terms are collaborative agreements, strategic international alliance, global strategic partnership and cooperative strategies. (Doole & Lowe 1999.)

Joint venture is a “form of collaboration between two or more firms to create a jointly owned enterprise” (Cavusgil, Knight & Riesenberger, 2008, 419). In joint venture, equity owned by each company in the newly formed company can be as low as 10 percent or equal or any other percentage agreed by the companies. (Doole & Lowe 1999, 341-342.) Host country puts number of restrictions in order to entertain specific market entry modes to restrict 100 percent foreign ownership or host country allows foreign companies to enter through the joint venture mode. Mainly in the developing country to promote new industries in less developed areas of the country they offer attractive joint venture incentives to promote that mode of entry (Muhlbacher, Dahringer & Leih 1999, 466.)

Doole & Lowe (1999, 342.) mentioned main advantages of joint venture market entry modes are allow foreign companies to own direct participation and understanding of local market and able to exert better control over operational activities. Keegan further highlights a number of advantages attached with this entry strategy which provide risk sharing partner, in-depth local knowledge, access to distribution system and cheap factors of production in the host country. However certain disadvantages attached with the joint venture market entry mode are lack of absolute control over the operations, disputes over adopted strategies among the venture partners, change in aims and objectives over the time, difficult and time consuming to find a good local partner for venture. (2002, 273-275.)

Strategic alliances are “collaborative partnership where two or more companies join forces to achieve mutually beneficial strategic outcome”. (Thompson, Strickland & Gamble 2005, 143).

There are three main defining characteristics:

- I. Partner’s contribution will be an ongoing basis in one or more strategic areas of interest, for example, products or technology.
- II. Partners can share the controls and benefits of alliance over the agreed life of the alliance.
- III. Partners are united to pursue for set of agreed goals by remaining independent to the formations of an alliance.

According to Keegan, strategic alliance has been the most popular market entry mode of internationalization in recent years. (2002, 290-291.) Doole & Lowe (1999, 346-347.) mentioned the main advantages of strategic alliance includes; through strategic alliance two or more organization having insufficient resources can be competitive in the new market to exploit the opportunities. Share the high development and research cost of products in a rapid changing pace of innovation and product life cycle. Government’s encouragement towards high cost projects and if alliance is the only entry mode to access the emerging global market.

2.1.4 Foreign Direct Investment(FDI)

Organization entering the new market under the FDI market entry mode has the option of wholly owned subsidiary and acquisitions. This means that organization owns and invests 100 percent of its own capital in the foreign firm. (Cavusgil et al. 2008, 429.)

Wholly owned subsidiary is also known as “Greenfield investment” the most expensive in terms of management commitment and resource requirement. Organizations having longer term prospective staying in foreign market will choose this entry mode. In case of early withdrawal of capital from the market, immense cost will be faced. Green subsidiary investment is a slow penetration process in which new plant or organization need to be set up from scratch which makes it more risky than acquisition. But green subsidiary investment will be free from inherited drawbacks of old establishment in case of an acquisition. (Doole & Lowe 1999, 339-340.)

Although sole ownership provides the level of control necessary to fully meet the firm’s strategic objectives, the negative side of sole ownership is that it bears all the risk of loss and damages which might affect the company’s reputation at home and abroad. The controlling right may not be the possibility in many countries due to government restriction of foreign company ownership, which will reduce the controlling right. (Keegan 2002, 276-277.)

Acquisition is “a combination in which one company purchases and absorbs the operations of another” (Thompson et al. 2005, 147.)

Acquisition is used to gain access to established resources such as network of raw material suppliers, established reputation, assets such as expertise, trained staff and management and the distribution channels. Only multinational organizations or organization have huge resources choose this market entry mode. (Burca, Fletcher & Brown 2004, 394.)

An advantage of acquisition market entry into the foreign market includes; firstly introduction of products and services in the market with much more speed than green investment mode. Secondly using acquiring subsidiary mode is attractive and viable option to target foreign mature market and to face less retaliation from competitors. (Cavusgil et al, 2008, 429.) Author highlights certain drawback of acquisition is that it takes considerable time of the management in search for a suitable saleable firms or organization at first and then in the negotiation process.

Assembly involves establishing plants in foreign markets simply to assemble components manufactured either in the domestic market or at another place. Many industrialized nations produced the main components locally. However the labor intensive assembly operations can be performed in the developing country. This gives access to cheap skilled local labour of the developing countries and helps to reduce production cost. This mode is very popular among the technology companies around the world. (Hollensen 2004, 339.)

In many developing economies of the world, governments establish Foreign Trade Zones (FTZ) or industrial zones. To attract the foreigners to invest in the economy by developing sound infrastructure and other facilities required to start the operations will be provided by the governments. Incentives such as tax holidays, cheap lease rental, duty and customs free import of raw material, machinery and technology. (Burca, Fletcher & Brown 2004, 393.)

According to Doole & Lowe, sometimes the governments in the developing countries put high import taxes in order to protect and facilitate local production or to promote foreign direct investment. Many companies usually build manufacturing plants anywhere with a long-term view in mind, but builds assembly plants in different markets to take advantage of cheap labour cost and government incentives. Author further highlights that all the governments not welcoming this market entry mode. The negative sign of the assembly operations is that it does not contribute to the local economy significantly as compare to the manufacturing facilities. (1999.)

2.2 External environment factors

External environmental factors can be analyzed using tool such as PESTLE analysis. PESTLE stands for political, economical, social, technological, legal and environmental changes. Organizations try to recognize and understand the changes in market environment using this analyzing tool in order to seek advantage ahead of competitors. (Cheverton, 2004.) International marketers pay attention to the PESTLE trends because failure to understand and respond to ever changing external market forces will affects all levels in the organization. (Huczynski & Buchanan, 2007.) Organization surrounded by the external environmental factors shows in the figure 2 below.

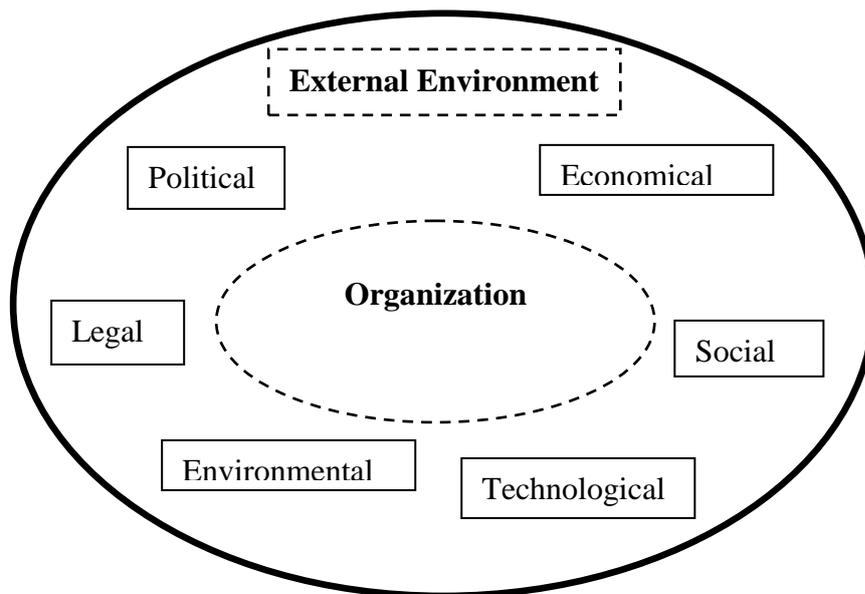


Figure 2: Organization and the External Environment

Political environment

“A risk due to sudden or gradual change in a local political environment that is disadvantageous or counterproductive to foreign firms and markets” (Doole & Lowe 1999, 22.)

Fundamental issue is considered by the international organization, to do preliminary screening of the political environment and system of the foreign target market. Government's involvement in developing business and communication in the country shows government's attitude towards the development and growth of local and foreign investment in the country. (Cavusgil et al, 2008, 192-198.)

Hollensen states that the political environment of the host country is a sensitive issue for a foreign organization. The firm should evaluate the host country political risk by the following factors; government stability, political process, tax control, import restriction, tariff barriers, administrative delays, attitude towards foreign investment and corruption. (2004, 167-177.)

It is always a main concern for any new market entrant to observe the stability or instability of prevailing government policies. Frequent change of the government should not result into discontinuation of business policies. The rule of law must prevail. (Cateora & Graham 2005, 159.)

Political instability in the host country is exposed as a risk for the foreign business that they are not normally facing this risk at home. Outbreak of war, terrorism, restricted mode of entry, nationalism, forced government takeovers and financial constraints are other important political risk. (Doole & Lowe 1999, 22-23.)

Economic environment

An economic environment is the most important factor considered by the international marketer in selecting the host country or territory. Worldwide countries' economies are at different stages of development. Organizations do prescreening of the target country for the availability of natural resources, extend of their development, diversity of the products produced, imported and consumed. The existing rate of economic growth and development, demand and supply for goods and services along with the distribution network will affects and attract the foreign business to enter potential market. Immense consideration should be given on eco-

conomic development climate of the less developed country (emerging markets) particularly in regards to market potential and growth. (Cavusgil et al, 2008, 260 - 269.)

An organization has to see the economic development indicators like GNP per capita, inflation rate, balance of trade, balance of payments, interest rate, fluctuations in currency exchange rates. In international market evaluation of all these factors play a very important role. These need to be analyzed at both the macro and micro levels. (Cateora & Graham 2005, 245.)

Many countries around the globe can be classified based on the national income (GNP or GDP) and degree of industrialization. Countries can be divided into four categories based on national income. (Hollensen 2004, 180-181.)

Less developed countries: The main features of less developed countries of having GDP less than \$3000, early stages of industrialization, poor infrastructure, bureaucracy, limited manufacturing, and low educational level. (Hollensen 2004, 180-181.) Growing demand of everything especially in the less developed countries is known as “emerging markets”. By lowering restriction and facilitating by other means governments of these countries invites foreign investors to meet supply and demand of the economy. (Doole & Lowe 1999, 19.)

Developing countries/New industrialized: These countries are known as upper income class countries with the GDP ranges between \$ 3126 and \$ 9655. High wages and literacy rate, urbanization increases, and improved infrastructure. A significant percentage of population engaged in service and industrial sectors as compared to agriculture sector. (Keegan 2002, 63.)

Advanced industrialized countries: These countries have significant GDP, sustainable economic growth, high literacy rate, highly industrialized and improved agricultural sector. (Hollensen 2004, 180-181.) Society focuses on new products and innovation. Countries like United States, Sweden, Finland, United Kingdom and Japan are advanced industrialized based on above features. (Keegan 2002, 63.)

Social/ cultural environment:

In International marketing, social and cultural environment of the market differs from country to country. Organizations should consider all the fundamentals of marketing mix; product, price, distribution and promotion that should be acceptable to potential target buyers. Organizations should consider certain important factors of the target markets such as knowledge of culture, collectivism, loyalty, brand, value, affordability and technology. (Burca, Fletcher & Brown 2004, 58-61.)

A failure to understand social and cultural environment of the target market can become disaster. Before entering into a potential market a careful study of the cultural difference is important. (Doole & Lowe 1999, 12.) According to Hollensen by the provision of suitable cultural training of staff or by means of having local staff risk of failure can be reduced or avoided. (2004, 74.)

Firms should also display respect for the basic beliefs, cultures and myths of the local community. It is important to understand the customer's cultural heritage and appreciate the particulars of the culture in order to be effective in the foreign market. Cultural issues are objective in nature, there is no question on right or wrong and superior or inferior due to the sensitivity involves in cultures. (Cavusgil et al, 2008, 124-149.)

Technological/Infrastructural environment

Organizations should consider the presence of adequate technological and distribution infrastructure in the host country. Reasonable domestic and international links should exist to compete and satisfy the demand should be considered. Reliability of these links made the timely delivery of the products and services. (Burca et al. 2004.)

Technological advancement such as website in today's era of globalization, organizations information of its products and services can be accessed by any potential customer around the world resulted in saving of paper cost, time, telephone calls and postage expenses. (David 1999, 107.)

Accessing the new information through the internet transformed the world rapidly. It has linked the people with the organizations. Potential buyer accessed the organization's products and service through telephone network, satellite and television broadcast, websites, emails and through other print media. (Burca et al. 2004, 139.)

Concerns have been raised by the companies about the invasion of privacy and breaches of security. Hacking of systems for financial and personal information theft was the main concerns while dealing online. This has been solved with range of products and measure to enhance the computer security concerns. (David 1999, 107.)

Environmental factors

Environmental concerns are growing due to global warming and all kinds of pollution created by various human activities. Key important environmental concerns include rising world temperature, increasing demand of water, pollution of air, water and land, deforestation and different kind of hazardous wastes. (En-Wikipedia, 2009.)

Different controls, policies and awareness need to be created in order to protect the environment. Controls and policies such as pollution control, transportation policies, and safe disposal of hazardous waste in order to protect the current and future environment. (Partridge & Hunt)

Legal environment

Organizations encounter with variety of legal system in the global economy. Internationalization process requires an organization have to follow the host country's domestic laws, international laws and home country domestic laws. (Burca et al. 2004, 119.) Enormous efforts will be done by the companies to develop a successful international marketing strategy. This is due to varying legal environment in the countries around the world. (Cavusgil et al, 2008, 163.)

According to Keegan, the legal environment consists of laws, courts, legal customs and practices. International organizations are affected by host countries certain legal issues such as intellectual property rights, bribery, corruption, arbitration, licensing and establishment. (2002, 122-138.)

Doole & Lowe (1999, 16.) mentioned three dimensions in the legal environment which are;

Host country domestic laws: All countries and territories have different local domestic laws. An organization indented to enter any potential target market will need to use experts in the legal system and laws for each target market. This helps in knowing the various implications and legal pitfalls of any legal system.

International laws: These laws constructed from agreement between nations tries to minimize the differences between the national laws. Originally, focus was political and military matter among countries. International organizations such as United Nations and World Trade Organization have now included investment, taxation and other international trade related issues. These world organizations and regional organizations of the world such as ASEAN, European Union and others are determined to harmonize the law applied on regional basis.

Domestic laws in the home country: To operate in the home country domestic legal system needs to be obeyed by all organizations. For international operations

organization need to fulfill all the implied requirements by the legal system of host country.

According to Cateora & Graham (2005, 180.) majority of the world's legal systems are based on below four bases:

Common law system: This is derived from English law and operates in United States, England, and former British Colonies in Africa and Sub- Continents and in British Commonwealth countries. It is based on past practice, traditions legal guide and court decisions.

Civil or code law system (Roman law): Code law is derived from Roman law and found in most countries where common law is not found. This includes most European countries, non Islamic countries and Japan.

Islamic law: This is derived and interpreted from the Holly Quran and applied at varying degrees. It deals with the religious duties and obligations of the followers especially relating to human acts. It applies in combination with common and code law. It is followed in Saudi Arabia, Pakistan and other Islamic countries.

Socialist legal system: Found in countries such as China, Russia and former Soviet republics which rely on economics, politics and society.

2.3 Competitive analysis

Managers used Michael E. Porter's competitive strategy and other techniques for any market or industry analysis. In internationalization process companies are under immense pressure to use different analyzing techniques to analyze the industry. Competitive strategy known as Porter's five forces is widely used in industry analysis as shown in the figure 3 below. (Keegan 2002, 304.)

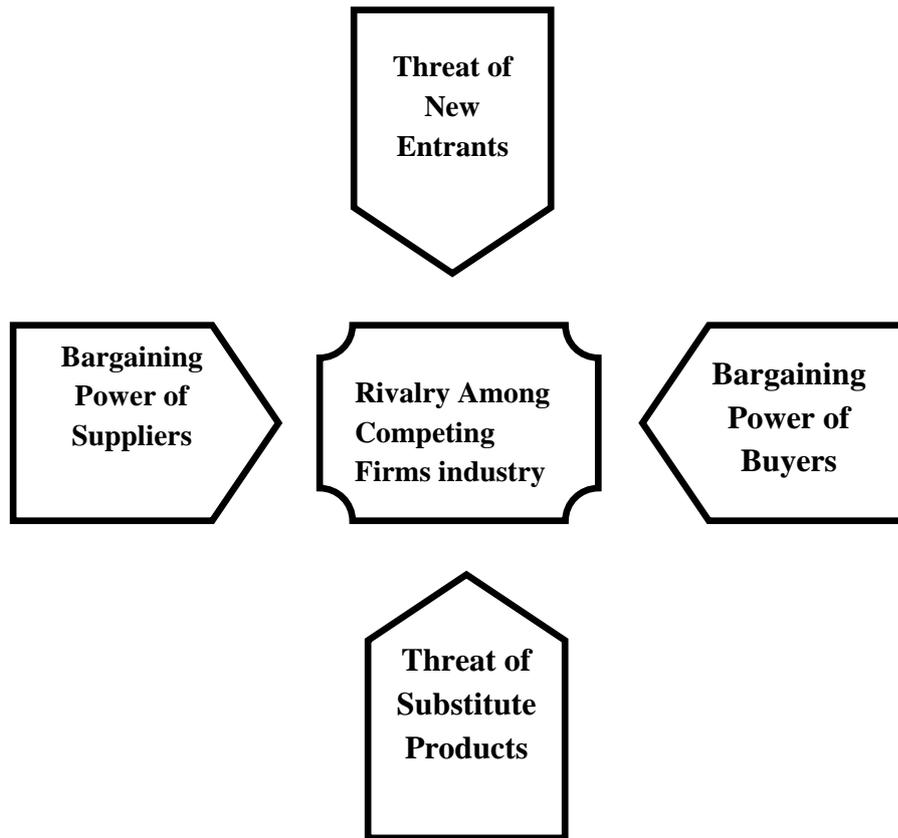


Figure 3: Porter's competitive five forces model

Rivalry among competitive firms

There are various factors to show the intense rivalry among the competitors such as; many competitors of equivalent size, slow market growth rate, high fixed costs, high exit barriers and high switching cost. (Hollensen 2004, 90.)

Rivalry among the firms can be positive forces which can drive the prices down, quality improvement and promotional war in order to gain the market share. But all this results is declining profits and eventually becoming the industry unattractive. David (1999, 127-128.)

Threats of new entrants

A new entrant erodes profits of the existing firms in the industry as it brings extra capacity into the industry. However, the entry depends on barriers to entry and behavior of the existing firms. The circumstances which discourage the new entry are gain economies of scale, product differentiation, large financial resources requirement, and high switching cost, access to distribution network, strong customer loyalty, Strong brand presence, tariffs and market saturation. (Dess & Lumpkin 2003, 54-55.)

At times, the firms find a way of entry in spite of numerous barriers in the industry by way of offering high quality products, lower prices and substantial marketing resources. (Hollensen 2004, 92.)

Threats of substitute products

Presence of the substitute products reduces the market attractiveness and profitability. If an industry is enjoying the high profits encourages competitors to enter the market through substitute products. This enables to share the potential profits available in the target industry. (David 1999, 128.) According to Hollensen threats of substitutes products depends upon the switching cost, price and performance and buyers willingness. (2004, 92.)

Bargaining power of suppliers

Suppliers can exert their bargaining power by threatening to increase the price and reduce the quality of product and service. The bargaining power of the suppliers will be higher by several factors: Few suppliers, high switching cost, unique or differentiated product, and market is not important and no threats of backward integration. (Keegan 2002, 307.) According to Hollensen bargaining power of sup-

pliers can be reduced by looking for new supplier and backward integrations by buyer. (2004, 91.)

Bargaining power of buyer

According to Dess & Lumpkin, a buyer can influence the market if a single buyer purchases large volumes from single supplier, product can be purchased from any suppliers, low switching cost, low profits and the possibility of backward integration by buyer. By using higher bargaining power, buyer can force the prices down for high quality products or services. (2003,56-57.) Buyers threatening power can be lowered by increasing the number of buyers, means of forward integration by the supplier and by producing high value differentiated goods and services. (Hollensen 2004, 91.)

2.4 Market phases

According to Lasserre & Schutte (2006, 197-198.) market entry timing will depend upon the objectives and the level of risk an organization ready to take. An entry can be made during these four phases an industry passes from;

i. Premature phase

Market entry at this phase needs considerable investment and long waiting time to earn profit. This is due to low demand, high cost of the product, and lack of purchasing power and longer payback period of the product. These are the characteristics of emerging marketing which needs limited investment at this early phase. Limited investment can be done through a representative office or distribution agreements. (Lasserre & Schutte 2006, 197-198.)

ii. Window phase

This phase is the take off stage. This phase is attractive to the first movers to take advantages such as best location, distribution network, supplier net work and time to establish brand. On the other side disadvantages will be lack of infrastructure, initial effort to establish product and market. Competitive advantage and being a pioneer in the market is strongest among advantages for the first mover in the emerging markets. (Lasserre & Schutte 2006, 198.)

iii. Competitive growth phase

Market at this stage is very attractive to the new entrant, not only because size of the market but also the market share. New entrants need enormous resources to be competitive and differentiate against current market players. (Lasserre & Schutte 2006, 198.)

iv. Maturity phase

Competition level at this phase among the current market players is immense. A foreign company with their unique product and service can enter the market by acquisition or direct investment. Large companies such as multinational organizations can enter the market. (Lasserre & Schutte 2006, 198.)

2.5 Summary

This chapter mainly covers different forms of market entry modes based on level of control and risk associated. Different market analysis techniques and tools are used in order to analyze the market. These market analysis tools are competitive forces, external market environment and market phases the industry is passing through.

This theory will help to make the empirical analysis of the renewable energy market in the Rawalpindi and Islamabad cities. Based on the market analysis using different tools the most appropriate mode of entry for the prospective Finnish wind and solar energy companies will be recommended.

3 RESEARCH METHODS AND CONTEXT

In this chapter, research methodology used in this thesis will be presented. This chapter presents and motivates how the data will be collected in order to find the answers for main research question and supporting research questions. It starts firstly with presenting the purpose of the research, followed by the approach of research. Secondly the research strategy will be inspected followed by the data collection, sample selection and the data analysis. Finally the method used to increase the validity and reliability of the research and research context will be presented.

3.1 Research purpose

Saunders, Lewis & Thornhill (2003.) stated three classifications of the research; exploratory, descriptive and explanatory. This classification depends upon the researchers understanding of problem area and the additional information needed to gather for the purpose.

Exploratory research is conducted to gather more information within the specified problem area to improve the final research. This means that the researcher gives comprehensive view of the problem area or where little research work has been done. (Cooper & Emory, 1995.)

Descriptive research carried out by the researcher in order to produce an accurate representation of the population, the events or situation. (Saunders et al. 2003). Descriptive research is carried out on the problem area on already existing theories or information. Descriptive research often complex and will be detailed and thorough because of the description of relationships between the several aspects or variables. (Cooper & Emory, 1995.)

Explanatory research builds on the previous data and requires the theories to answer the research question. Researcher then formulates the theory wish to test the relation between the variables before designing the questionnaire to find the causes and the effects. (Saunders et al. 2003.)

The research was mainly explanatory because the nature of the study was to explore the target area to analyze the market of Rawalpindi and Islamabad, in order to find the most appropriate market entry mode. However in order to better understand and analyze the target market descriptive and exploratory methods were also considered.

3.2 Research approach

There are two different research methods in order to conduct a research i.e. qualitative and quantitative. The difference between the two methods can be seen the way data will be analyzed. In a research study, a researcher can use both the methods depending upon the need of the study. (Cooper & Emory, 1995.)

In the quantitative research technique, the data is transformed to numbers and quantities, and then the statistical analysis is performed on the gathered data. (Cooper & Emory, 1995.) However the researcher interprets the data which cannot be transformed to numbers or quantities such as attitudes, behaviors, and values of the people. (Sekaran, 2003.)

The researcher has chosen the qualitative research approach for the study. Because the data collected for the market analysis from the target groups such as renewable energy companies, Alternative Energy Development Board, real estate developers and Chamber of Commerce Rawalpindi. Empirical material was collected from these target groups in the form of in-depth interviews, personal experience and literature provided. Finally qualitative research seemed to be more appropriate to answer the research question and subsequent questions in order to achieve the research objective.

3.3 Research strategy

Saunders et al. (2003) stated eight strategies which are; experiment, survey, case study, grounded theory, and ethnography, and action research, cross-sectional and longitudinal studies, exploratory, descriptive and explanatory. When the research focuses on few aspects and the research questions are in form of 'what', 'why' and 'how'.

The researcher has chosen the exploratory research strategy in order to explore and analyze the renewable energy market of Rawalpindi and Islamabad. This analysis will help to find the most appropriate market entry mode for the prospective Finnish company.

3.4 Data collection

Data collection can be divided into two categories; primary data and secondary data. The researcher collects the data for a precise purpose under known as primary data, however secondary data has already been collected for another purpose. (Cooper & Emory, 1995.)

Sources of secondary data are the company records, web sites, books, periodicals, government publications whereas the primary data sources are mainly individuals, focus groups, panels and modest methods can be collected through interviews. (Sekaran, 2003.)

There are different data collection methods for appropriate methods used to fulfill the purpose of the research. Six modes of data collection are; personal (face to face) interviews, telephonic interviews, personally administered questionnaires, mail questionnaires, and electronic questionnaire. (Sekaran, 2003.)

There are two types of questions in a questionnaire i.e.: open-ended questions or close questions. Open-ended questions allow the respondent to answer the ques-

tions in any way they choose whereas in closed-ended questions set of alternatives are given to the respondent to choose from. (Cooper & Emory, 1995.)

The respondents were chosen after considering their relevance to the study research in the target area. The respondents include Alternative Energy Development Board of Pakistan, local renewable energy companies in the target cities, real estate developers and Chamber of Commerce.

The Alternative Energy Development Board of Pakistan (AEDB) was selected to gain the information and data for the solar and wind energy situation in the cities of Rawalpindi and Islamabad. This helped to analysis the current market situation of the target cities. It helped to get data of current renewable energy companies in the two cities and other information such as legal issues, current and future polices of the government for the renewable sector. Chamber of Commerce was interviewed to get view of its role and activities in facilitating the industry in the cities.

Renewable energy companies of the target cities were the main focus groups to analyze the market for the new entrant. Data and information obtained through this group facilitates to know which renewable energy solutions current players are dealing in, renewable industry situation, there scale of operations, potential of the market, environment factors and suitable mode of entry for the possible new entrant.

Real estate developers were considered as big business potential area for the new entrant dealing in renewable energy solution of solar and wind in target market. This helps to know real estate developers willingness, ability and awareness towards these environmental energy options for their electricity needs.

The researcher chooses face-to-face interviews to collect the primary data in order to analyze the two cities market. This method gave the opportunity to ask the follow up questions along with the right questions to gather the data specific for this study. Open-ended questions were chosen which allow the interviewee to share his experience and knowledge to answer the research questions more specifically. The

questionnaire was handed in to the interviewee before the interview date, and interview was conducted on the date and time agreed by the interviewee. During the interview I took notes while I was recording the interview with the tape recorder. Most of the interviews took around 45 minutes each. Interviews were conducted in both English and Urdu languages.

3.5 Sample selection

A sample selection technique enables the researcher to focus on the limited target groups rather than whole population. This will reduce the chances of reducing the data and information required for the study.(Sekaran 2003.)

The main sample selection criteria used for companies dealing in renewable energy and real estate developers were:

- Goodwill
- Scale of operation
- Financially stability

The reason to choose these companies was to analyze their scale of business operations, market situation, product portfolio and customer's trend. The primary data from these renewable energy companies provide the basis for market analysis required to find the appropriate market entry mode for the prospective Finnish company. However the reason to choose these real estate developers as potential customers of prospective Finnish technology company for small wind turbines or solar energy solutions for their electricity needs.

Name of the renewable energy companies are:

- i. Sahgal Electronics
- ii. Clean Power
- iii. Akhtar Solar

- iv. Trillium Pakistan
- v. Benchmark Technologies

Names of Real estate developers are:

- i. Bahria Town, Islamabad
- ii. Defence housing authority, Islamabad
- iii. Al Haram City, Rawalpindi

3.6 Data analysis

There are different approaches to process and analyze the qualitative data (Saunders, Lewis & Thornhill, 2007) includes;

Categorization: involves classifying or rearranging the data into a meaningful category. This provides with a developing arrangement of the study to organize and analyze the data further. This categorization will need to be the part of consistent set which will present a fine structured systematic frame to follow for the data analysis.

Unitising data: this analytical method involves adding together appropriate 'bits' or 'chunks' of data to the appropriate categories the researcher have created. This can be number of words, number of sentences or complete paragraph that fits that category.

Recognizing relationships and developing categories: generating categories and reorganizing the data accordingly. This analysis process continues by recognizing the relationship of data and by developing sub-categories based on the meaning of the set of data. This approach categorization and coding of data leads towards generating an explanation of the research question and objectives of the research study.

Developing and testing hypothesis: revealing and developing the relationship between categories in order to develop hypothesis (a testable proposition) to test.

The researcher started analyzing the qualitative data from raw data form into the logical order and meaningful categories. This was done by putting the data into different categories based on the research questions and theory of the study. Small bits and chunks were added to develop the concept for the raw data. This data analyses has made it possible to draw conclusion for solar and wind energy prospects and potential for Finnish technology companies in Rawalpindi and Islamabad, Pakistan.

3.7 Validity and reliability

Reliability can be assessed if the similar results will be obtained if the same research is conducted again by another researcher. The main threats to reliability are errors and bias. (Saunders et al. 2003.)

Validity is concerned with the adequate coverage of the topic which will provide the result deemed accurate, honest and according to the objective of the study. (Sekaran 2003.)

3.8 Research context

The focus of my research focuses on the capital city of Islamabad and Rawalpindi, Pakistan. Some of the basic facts are given in the table 1 and details of the metropolitan cities of Islamabad and Rawalpindi along with the country overview are presented. Following figure 4 shows the map of Pakistan highlighted by circle Islamabad and Rawalpindi.

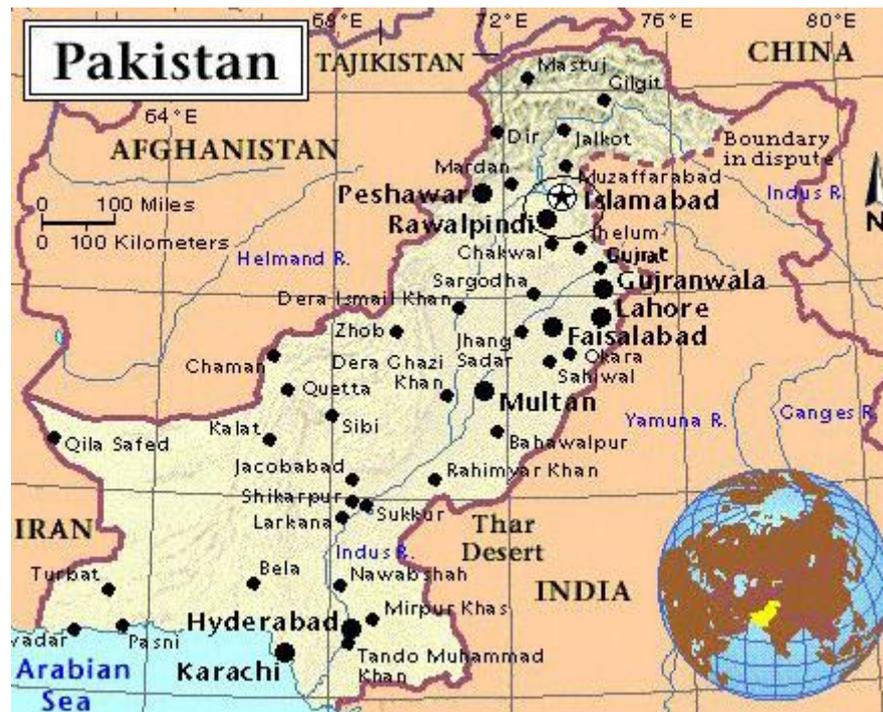


Figure 4: Map of Pakistan, locating Islamabad and Rawalpindi
(Unique century, 2009)

<i>Basic Data:</i>	<i>Rawalpindi</i>	<i>Islamabad</i>
Location	Punjab	Punjab & NWFP
Population	3 363 911	805 235
Male %	51.20%	59.93%
Female %	48.80%	46.07%
Area sq.Km	5285	906
Literacy rate	75 %	84 %
Average household	6.5 Persons	6.2 Persons
Languages	Urdu	Urdu
Labor Force	-----	185,213
Unemployment rate	-----	15.70%

Table 1: Basic Data: Rawalpindi & Islamabad

(Government of Pakistan statistic Division, 2009; Freebase, 2009;
World gazetteer, 2009 & Wapedia, 2009)

The city of Rawalpindi is located in the province of the Punjab and locally known as 'Pindi' is the fourth largest city of Pakistan. Rawalpindi is a district city consists of 6 Tehsils/Towns and 170 Union Councils. Total area of the city is 5285 square kilometers. Total population of the city is over 3,363,911 representing 51.20 % male and female representing 48.80% of the city population as per 1998 census. An average household size is 6.5 persons.(Government of Pakistan, 2009.) Rawalpindi district is the 2nd largest urbanized district of province the Punjab with 53.03% of the urban population. (Freebase, 2009; World gazetteer, 2009.) Weather conditions are highly variable due to its geographical location. Temperature in the summer soars to maximum up to 47centigrade and minimum -4 centigrade in the winters. (Wapedia, 2009.) Literacy rate in the urban Rawalpindi was 75% during year 2004-05.(Government of Pakistan statistic divison,2009.)

The capital of the Pakistan, Islamabad is the tenth largest city of the Pakistan covers an area of 906 squares Kilometers. Historically it is located on the crossroad of the Punjab and the North-West Frontier Province. (Wapedia, 2009 & en-Wikipedia, 2009) The estimated population of the capital is over 805, 235(census 1998) representing 53.93% male and 46.07% female population. An average house hold size is 6.2persons. (Government of Pakistan, 2009)The Rawalpindi/Islamabad metropolitan area is the 3rd largest populated cities of the Pakistan. Mainly Urdu is the spoken language in the city due to an ethnic mix of the population. Literacy rate of Islamabad is 84 % highest in the Pakistan during year 2004-05. (Government of Pakistan statistic division, 2009.) Islamabad's climate is extremely hot summers and monsoon rains during the months of July to August and fairly cold weather during winter. Temperature ranges from a minimum of approximately -4oC to a maximum of 47 (Country studies Pakistan, 2009.) Total labour force of Islamabad is 185, 213 people with an unemployment rate of 15.70 %. Both the cities are almost similar weather conditions.(Wapedia, 2009.)

Pakistan is situated in the South Asia. The official name of the country is Islamic Republic of Pakistan. The country got independence from the British rule on 14th August 1947. Country is divided into four provinces named as North West Fron-

tier Province (NWFP), The Punjab, Sindh and Balochistan. The total geographical area of Pakistan is 7, 96,095 sq km including the Federal Administered Tribal Areas and the capital Islamabad. Pakistan's estimated population of is 1.68 millions (Government of Pakistan Statistic Division, 2009.).Pakistan is bordered by India on the east, China on the north east, Afghanistan on the northwest while Iran on the south west and Arabian Sea in the south. A country map is shown in the Figure 4 above. (CIA Fact Book, 2009.) Country experience extreme hot and humid weather in summer, mild cold weather in winter in most regions and spring with moderate climate.(Government of Pakistan Statistic Division, 2009.)

Pakistan is a Muslim state, 97 % of the population by religion is Muslim. Urdu is the national language of the country however the official language is English. 53% of the population is literate. Pakistan has the parliamentary form of government. The Parliament consisting on the Senate (Upper house) and the National Assembly (Lower house).Major big cities of the four provinces are; Karachi, Lahore, Islamabad, Rawalpindi, Peshawar, Quetta, Sialkot, Hyderabad, Faisalabad and Multan. (Government of Pakistan Statistic Division, 2006)

The economic growth of Pakistan has been suffered heavily due to world recession, war and terrorism, due to domestic slowdown and energy shortage. During 2008-09 real GDP growth rate of the country was 2.0% however the growth target for the next fiscal year is 4.5%. Agriculture, Industry and service sectors respectively contributed 50.1%, 46.1% and 38.6% towards the GDP. However Pakistan's per capita income has risen by 2.5% over the fiscal year 2008-09 and reached \$ 1085 from \$ 1042 of 2007-08 fiscal year. Expected inflations figures will be an average 21% during the fiscal year 2008-09. (Economic survey of Pakistan, 2008-2009)

Pakistan's electricity supply mix in 2007 was heavily relied on fossil fuels contribution such as gas 47.8%, oil 15.6%, and coal 0.8% and the remaining 33.5% and 2.4% contributed by Hydropower and nuclear power respectively. Electricity energy generation mix is show in the figure 5 below. Electricity generated from this mix is largely consumed by the domestic sector followed by industry and

agricultural sectors at 44.5%, 31.1% and 24.40% respectively as shown in the figure 6 below. Due to increase in demand the energy gap recently reached 4000MW in 2008 which represents 40% of total electricity generation. It is expected this gap will double by 2010. (Asif, 2008)

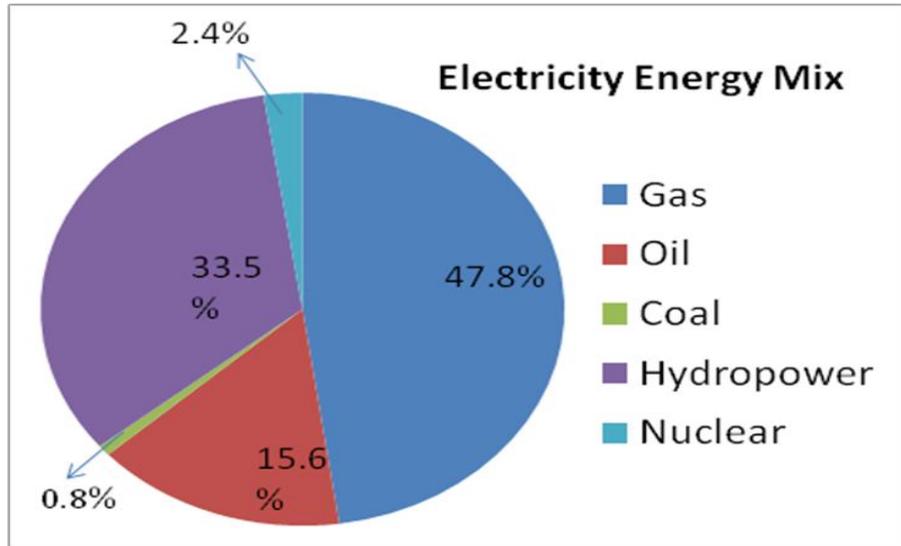


Figure 5: Electricity energy generation mix
(Arif, 2008.)

Electricity generation mix 2007 of Pakistan was based on mainly fossil fuels and no contribution of renewable energy resources such as wind or solar energy.

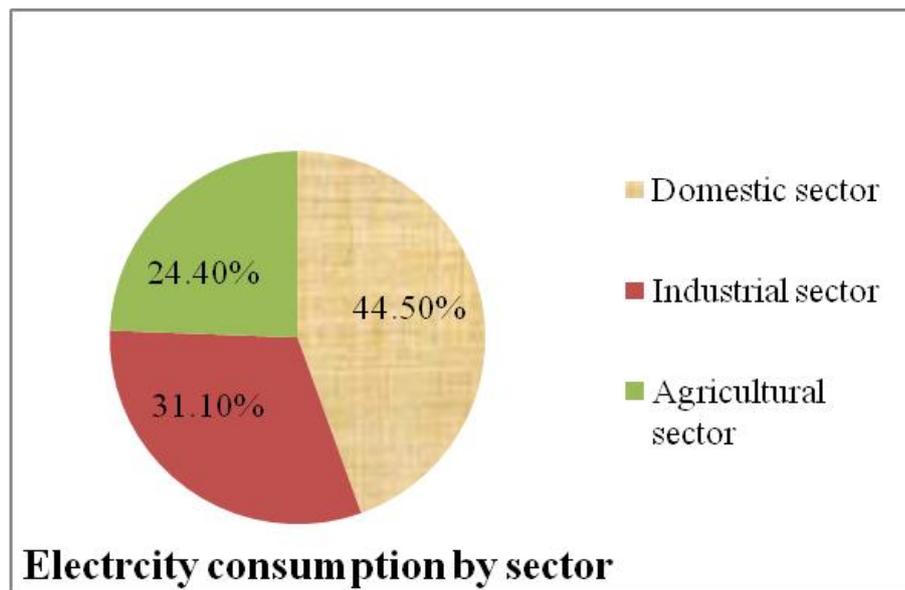


Figure 6: Electricity consumption by sector
(Asif, 2008.)

The average house spends large portion of their energy bill particularly on electricity which was 63 % in 2007. The Punjab province is the largest consumer of electricity which is approximately 62 % of the total electricity generated. However Pakistani government estimates that generating capacity needs to grow by 50 percent by 2010 in order to meet expected demand. Transmission losses are about 30 percent, due to poor quality infrastructure and a significant amount of power theft is also an issue. Estimated 45 % of population is living without access to electricity. (USAID 2007)

According to State Bank of Pakistan annual report (2007-08.) the country is an oil and heavy machinery importing country to meet economic needs of the country. This adversely affects the balance of trade of the developing economy of the country. Pakistan's electricity supply and demand gap is increasing rapidly and creating challenges for the government of Pakistan to meet the needs of increasing population and economy. To meet the rising demand for energy, the government of Pakistan is currently focusing on diversification of gas supplies, reconstruction of hydro power plants, construction of underground gas storage facilities, development of oil exploration and trying to encourage local and foreign investors to explore renewable energy resources. Electricity prices are adversely affected due to fluctuation in the oil prices in the international market which consequently affect the end users budget.

Pakistan has to diversify its energy options by exploring sustainable energy resources through renewable energy. Renewable energy has the potential in Pakistan due to its location and climate. Because the potential of renewable energies has not been utilized in Pakistan, the government created (USAID 2007.) Alternative Energy Development Board (AEDB) in May 2003, to act as the central national body on the subject of renewable energy. Hydro and solar forms of renewable energy are in use. Whereas wind energy has not been utilized so significantly it remains limited to the test farms and later to a few small wind energy farms in

coastal areas. Figure 7 shows the wind and solar potential areas of Pakistan identified by Meteorological department of Pakistan. (AEDB, 2009.)

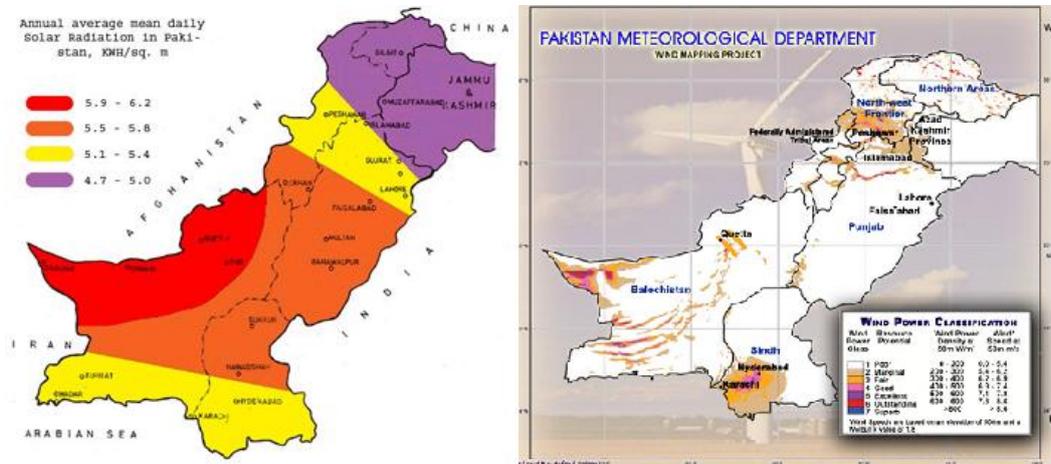


Figure 7: Wind and Solar energy map of Pakistan. (AEDB, 2009.)

3.9 Summary

Chapter three discusses method used in this research study and the research context. The researcher has chosen the qualitative research method in order to analyze the data and information gathered for field study research. The researcher gathered the data through interviews. The target groups of the study were renewable energy companies, Alternative Energy Development Board, real estate developers, and the Chamber of Commerce in the target cities. Notes were taken during the interviews along with audio recorded of all the interviews. Data and information gathered through the interviews were analyzed by categorizing the data by adding chunks and bits with the raw data.

4 MARKET ANALYSIS FOR PROSPECTIVE FINNISH SOLAR AND WIND ENERGY COMPANIES

In this chapter, the data gathered through the face-to-face interviews with the selected target groups will be presented. This starts with the current market situation analysis of solar and wind energy situation in the target cities. Followed by market entry mode, competitive industry analysis and industry phases and factors affecting the market entry modes going through will be analyzed. This analysis is based on information and knowledge gained in interviews with Alternative Energy Development Board, Chamber of Commerce and Industries, Real estate developers such as Bahria Town, Defence Housing Authority and Al-Haram City and main renewable energy companies of the target cities namely Solar Power, Benchmark Technologies, Akhtar Solar, Trillium Pakistan and Sahgal Electronics. Lastly the recommendations along with proposed business model will be presented.

4.1 Current market situation analysis

Market analysis of the current solar and wind energy situation in the target cities of Rawalpindi and Islamabad, Pakistan

Solar situation

It was revealed during the interviews that all the renewable energy companies deal in solar energy solutions and other related solutions. No one is currently dealing with wind energy solutions in the cities. Five out of six selected companies were interviewed and all of them are dealing in solar energy solutions in target cities.

Clean Powers Ltd is the only company who is providing the pre and post consultancy services in the renewable sectors. They are also operating the projects on Turnkey basis. They have been in this renewable energy business since 2001. Product portfolio of Clean Power includes; Bio fuel, solar panels, solar lights, solar water heaters, solar street lights and so on. The organization has done nu-

merous solar lighting projects with government, semi-government organizations and the Pakistani Army across the country.(Tanveer, 2009.)

Sahgal Electronics is one of the oldest companies dealing in renewable energy solutions in the region of Rawalpindi. The company has done projects with AEBD, USAID, UNDP (United Nations development Program) in rural areas of Sindh and Baluchistan provinces for electrification. They basically import the solar panels from western countries that are renowned in this solar technology. The company is also engaged in providing technical training to youth under a joint project of training with the government of Pakistan and the World Bank. The company also purchases assembled imported panels from a local company named as Akhtar Solar.(Sahgal, 2009.)

Akhtar Solar is the only company in the area who is engaged in importing raw solar material. The company has the assembly unit and technical skill and technology to assemble it locally. Assembly technology has been imported from a western country. Raw material which is solar cells being imported from a specific solar company abroad due to the quality standards and agreement with that Western solar company. Akhtar Solar is not directly involved in facilitating the end users for their backup requirements. They are using the distribution network to sell their finished products which are solar panels. Local renewable energy companies are mainly the buyers of solar panels of Akhtar Solar company. (Iqbal, 2009.)

Benchmark Technologies are dealing in solar energy backup solutions. They import complete solar energy backup solutions. They are in the business over a period of 5 years .Their target customers are mainly the telecommunication sector across the country.(Aftab, 2009)

Trillium Pakistan, Pvt, Ltd since 1983 is dealing in the renewable energy sector. The company deals in various renewable energy products such as micro hydro turbines, solar panels, micro wind turbines and solar LED lamps. Trillium worked as sole representatives/distributors of one of the world's best companies and brands like BP Solar in Pakistan. There scale of operations spread all over Pakis-

tan in collaboration with all the main organization. They have done projects with AEBD and UNDP for solar electrification for rural houses in Sindh province. The scale of affairs of the company shows their financial strength, technical knowhow and team of suitable professionals to better entertain all kind of projects at any scale.(Afzal, 2009)

Wind situation

During the field research, it was found out that all the renewable energy companies selected for interview to analyze the market are dealing in solar energy back-up solution. A few of them like Sahgal electronics and Clean Power have done some projects on micro wind turbines, but in the Northern areas of Pakistan. But currently they are mainly dealing in solar energy solutions.

It was learnt through interviews that all renewable energy companies in Rawalpindi and Islamabad are not dealing in wind energy. All respondents unanimously have the same answer that firstly the wind data is not available in the area. Wind is not constant in the two cities all round the year according to their own experience and information obtained from the local people.

The Meteorological Department and Alternative Energy Development Board are currently focusing on the identified wind potential area. According to the AEDB and the renewable energy companies one geographical area named as “Kallar Kahar” is located on the wind corridor (2009). The said area has great potential for the wind energy generation at farm scale for electricity generation.

Big real estate developers Bahria town and Defence Housing Authorities Islamabad have shown interest in the solar electricity options possibility. Even though, they are getting electricity from the national grid at high priority. Management of both the real estate developers is aware of the solar energy potential. Respondents pointed out that resident of their developed towns are mainly middle and high in-

come groups of the society. These two income groups of the city have the potential and purchasing power to adopt these sustainable energy solutions.

Based on the geographical and environmental conditions are very much suitable for solar energy than wind energy within the two cities of Rawalpindi and Islamabad. That's why all the main renewable energy companies are dealing in the solar energy solutions.

4.2 External environmental factors analysis

External environmental factors are analyzed using PESTEL as a tool. PESTEL tool can assist the Finnish wind and solar energy company to understand the market of Pakistan in general and particularly the market of two cities Rawalpindi and Islamabad in particular. The information gathered from main renewable energy companies, Alternative Energy Development Board and the Chamber of Commerce in the target cities.

Political environment

Government instability or unrest is a permanent issue in the developing countries like Pakistan, which leads to uncertainty and continuation of policies in all respects. Over the last two decades frequent changes occur at the political level which affects the governments. Frequent interruption in the democratic process and consequently taken over by the military creates a bad image in the developed economies. Because of this instability both the democratic and the military rulers were not able to concentrate on developing the energy sector.

Gap between the supply and demand grows dramatically due to increase in the population and industrial growth of the country. The electricity supply and demand gap causing huge black out throughout the year affecting the consumers. People are forced to live with the electricity during this black out time or switch

to the available alternative energy solutions such as diesel generators or UPS (Uninterruptible Power Supply) these traditional electricity backup solutions are not only costly but damaging the environmental as well.(Awan & Jafri, 2009.)

The government of Pakistan has the Vision 2025 of hydro and coal power generation projects such as Kalabagh Dam and Thar Coal power, which are currently delayed due to political controversies. These projects will offer low cost energy supplies and prevent need for the renewable energy sources such as wind and solar power systems. Wind and solar power will be in direct competition with Vision 2025 if these political controversies will be resolved.

The country has huge resources of small and huge hydro, gas, coal, bio fuel, waste energy, wind and solar potential. The current political government is aggressively promoting all sectors of economy especially the renewable energy sector to meet current and future energy demands. They are encouraging the foreign investors to invest in the energy sector.(Jafri, 2009.)

Therefore an encouraging and facilitating attitude has been adopted in promoting the alternative renewable energy sources mainly wind and solar power projects. The government has issued about 80 LOI (Letter of Interest), submitted by different local and international companies in the solar and wind electricity generation options in different parts of the country. This scale of signing contracts has shown the favorable attitude of the current government to increase the renewable energy portion in the current energy mix. This will solve the current and future electricity demand through the solar and wind. (Jafri, 2009.)

Economic environment

Data and information relating to the economic environment of the target country was gathered during the field research. This external factor is very much taken into consideration by the foreign investors before entering the target market. Pakistan is considered as a developing country based on economic indicators such as

the high inflation rate, high interest rate, low GDP rate and frequent currency fluctuations, low per capita income, high prices and unemployment.

Instability in the neighboring country Afghanistan and USA conflicts with Iran have direct effects on Pakistan's economy. Pakistan's commitment as a frontline country in the fight on terrorism within its tribal areas along with Afghanistan is effecting the economic growth of Pakistan.

Current financial crises around the world and developing nature of the country have largely affected GDP, interest rate and inflation rate. Interest rate has gone up from 7.5 % in FY 04 to 12 % in FY 08. Wholesale price inflation has increased over the same period from 7.9% to 16.4%. Pakistan has maintained reasonable GDP growth rate of 7.4 % to 5.8% over the last 5 years. (State Bank of Pakistan, 2008.) Therefore prices of imported products firstly effected by high inflation and secondly due to frequent currency fluctuation.

Due to the political instability, the war against terrorism and almost a decade long ruled by the military, no efforts were taken to improve the economic indicators. Focus was not given to invest in the infrastructure and the energy sector development to boost all sectors of the economy. This adversely affects the unemployment rate, cost of production, balance of trade and all the sectors of the economy.

In 2008 by the restoration of the democratic government, economic activities are being revived by the elected political government and have opened different industries for the foreign investors. Different incentives are being offered by the government to help and facilitate the foreign companies to invest in the country.

Mr. Awan(2009.) regional business coordinator at the Rawalpindi Chamber of Commerce explained that Pakistan is a developing country but full of natural resources such as oil, gas, coal, and water. Jafri (2009.) at AEDB further highlights that the country has tremendous potential in all the renewable energies. But due to the lack of technology and lack of foreign investment these resources have not yet being exploited. The current political government has realized to use these natural

energy resources to meet countries growing energy demand. Government is encouraging the foreign renewable technology companies by giving incentives to invest in this upcoming energy sector of the country.

Social/ Cultural environment

During the field research, it was observed that society at large does not have any beliefs or traditional conflicts. Whereas, the main point here is that society is not aware of renewable energy solutions. They believe that providing basic necessities such as electricity is the responsibility of government.

It was further highlighted that the end users preferred to adopt readymade solutions for their backup electricity needs in case of power shutdowns. They are forced to use diesel generators and Uninterruptable Power Supply (UPS) as backup. The majority of the population within two cities is educated and is aware of the solar and wind energy and its importance. On the other hand, the population of the target cities does not bother to consider these green electricity generation options. This is mainly due to very high priced solar energy backup solutions and lack of awareness and marketing. (Sahgal, 2009.)

Due to the lack of marketing campaign and promotion of these environmentally-friendly energy generation solutions, the society is hesitant to change their traditional means of backup. To influence and motivate them a functional model project is absent in the society. Society in the target market has very close family ties. Therefore the family members have great influence on each other in the decision making especially where considerable investment and family as a whole is affected. The decision to buy these back up energy options are done by the head of the family by consulting with other family members.

Technological infrastructure

The country has the basic technological infrastructure needed to setup and to operate business in all the major cities. The basic infrastructure includes telecommunication links, satellite communications, internet, faxes, worldwide web, print and electronic media. All the major cities have universities and technical institutions which are continuously producing graduates in technical qualifications. All the main cities are linked with good network of road and motorways. Three seaports and all the airports are linked through the road and rail network for the safe and sound delivery of products across the country.

Jafri (2009) explained that the department of Alternative Energy Development Board (AEDB) has sufficient latest technical devices and skilled manpower to measure and identify the wind and solar potential areas in the country. These technologies have been used to explore and identify solar and wind energy potential areas in the country.

Now the country is spending considerably in the capital resources by importing latest technology and machinery to meet industrial demand. The government is reducing import duties on importing machinery needed in different industries. Particularly there is no import duty on the renewable technology and machinery. These attractive measures are taken to promote the manufacturing by utilizing latest technologies available to explore the rich economic resources of the country.

Western technology such as net electricity metering system or feed in system needs to be introduced by the government to motivate and encourage the end user to generate solar electricity. This will reduce the payback period of the high capital investment in the solar electricity backup solutions used by the end user.

Environmental factor

Environmental protection issues are raised by different non-profit organizations. Government is doing tremendous efforts in order to protect the environment by plantation and by making efforts through mass media.

However the general public is not aware of the environmental issue. They never give attention to their various activities which are not badly affecting the surroundings but also affecting the environment.

Legal issues

Legal issues were discussed with the interviewees of local companies dealing in renewable energy solutions and the Alternative Energy Development Board (AEDB 2009.). The researcher tries to cover all the legal issues related to the study research such as market entry barriers, company formation legislations and operational issues.

Government is trying to promote and develop renewable energy industry in the country; there is zero import duty on renewable energy generation technology and raw materials according to SRO 490 (Sales Tax Rectification Order). However on the import of assembled renewable energy backup solutions, an import duty of 5% has been levied. Zero import duty on raw material import is to facilitate assembly and manufacturing operations in the country to promote and develop solar and wind energy industry. First year capital allowance of 90% is given to foreign and local investment to encourage renewable energy industry in the country. This tax advantage is an attractive place for foreign companies in renewable energy to invest and operate. (Jafri, 2009.)

A respondent at the Chamber of Commerce and Industries and at the AEDB mentioned that Companies Ordinance 1984 provides the legal framework for all forms of business operations within the country. Under this Ordinance complete guide-

lines for foreign investors have been issued and to provide legal protection on all forms of entry modes. An AEDB respondent also mentioned that they are working in close collaboration with the Board of Investment Pakistan to facilitate the foreign investors in the renewable energy sector. According to interviewees these energy solutions are environmental friendly therefore no environmental and health and safety restrictions are imposed under current legal system.

Foreign companies normally enter as IPP (Independent Power Producer) in the energy sector. The foreign company can use any market entry mode and get registered under the Companies' Ordinance 1984 to perform its business operations in the country. For electricity generation they need to obtain an electricity generation license for the NEPRA (National Electric Power Regulatory Authority) as an IPP. Electricity generated by the renewable sources will have to be purchased by the local electricity company as per NEPRA's rule. There is no import duty on electricity generation technology and products in the country.(Jafri, 2009.)

4.3 Competitive forces analysis

The researcher analyses the target solar and wind market using Porter's five competitive forces model. Mainly all the renewable energy key players in the target cities were interviewed. These renewable energy companies are mainly dealing in solar energy backup solution and other alternatives which suit the end user energy demands.

Rivalry among competitive firms

Rivalry among the competitive firms is not severe in the two cities of Rawalpindi and Islamabad. The reason is that only few local solar energy companies are operating in the two research cities. There is lack of awareness in the general public (residential customers) due to lack of marketing campaign, high capital cost of the solar energy solutions and social awareness. Current local renewable energy com-

panies are targeting and focusing on commercial and industrial users across the country that has the financial resources to afford these expensive backup solutions.

All of them are importing the renewable energy products and devices due to lack of manufacturing operations in the country. Some of these renewable energy companies such as Bench mark technologies director marketing Mr. Aftab mentioned that the company mainly import solar energy parts and performing as a dealer for a foreign company solar products. The company has targeted telecommunication industry to meet there electricity backup requirements across the country (2009.). Trillium Pakistan, working as sole authorized representative and distributor of BP solar. Trillium Pakistan's target customers area is semi government, government organizations.(Afzal,2009.). Sahgal Electronics is acting as dealer of the local assembly operator for its products, but import other necessary devices required for complete solar backup solution. (Sahgal, 2009.) Clean Power is the only company in the two cities doing projects on turnkey project basis and provides consultancy services. (Tanveer, 2009.)

Akhtar Solar, the only local company is engaged in assembly operations by importing raw solar cells. Finished product is the solar panels targeting to the local distributors. Assembly operator its self is not engaged in public dealing for their backup electricity solutions. Akhtar Solar has no direct competition with any other local player in market. Company is enjoying the monopoly situation and the incentive such as zero import duty on import of raw material and technology.(Iqbal, 2009.)

Based on the information, number of local companies in the two cities, lack of marketing and awareness among the customers at larger and absence of foreign player in the market. The rivalry level among the competitive firms is not so intense.

Threats of new entrants

The threat of new entrant is however present. Currently the renewable energy industry in Pakistan is at growing stage. Country is full of resources and potential for renewable energy options. Few local companies are dealing in the renewable backup energy solutions in the two cities of Rawalpindi and Islamabad. A threat of new entrant is present particularly a foreign player due to the absence of foreign player in the two cities. Government is giving incentives such as zero import duty on renewable energy imports and 90% capital allowance in the first year to encourage the foreign investors. These incentives are very attractive to new potential entrants, to avail these benefits. Due to the emerging nature of the renewable energy market of the country as a whole and cheap factor of production will attract the new entrants.

However strong trade barriers exist in terms of slow market growth, less demand, lack of awareness in society, early stages of the renewable energy industry, low profit and high capital investment requirements.

Threats of substitute products

Threat of substitute products is already present as already mentioned; the present energy crisis has led people to rely on energy sources other than hydro power i-e petrol, diesel and gas generators and UPS (Uninterrupted Power Supply). During interview it has been told by all the representative of renewable energy companies that substitute backup electricity products are readily available in markets of the two cities (Rawalpindi and Islamabad). The products are of different quality and output capacity depending upon the various needs of the end users of the market. Their prices vary but are affordable to the larger medium and rich income class of the two cities.

These available products are not the good substitute for various electricity backup needs. They have high variable running cost which not only affects the environ-

ment but also increases the energy bill, which ultimately affects the end users budget. For example a price of an ordinary diesel generator ranges from € 640-€1200 (Rs: 80,000 to Rs: 1, 50,000) (€ 1 = Rs 125.00) depending upon the brand and output. Whereas solar electricity solutions ranges from 500 watts priced € 2191 approximate (Rs: 2, 70,000) (€1= Rs 125). However UPS (Uninterrupted Power Supply) home system for 4 hours basic necessity home back up electricity requirements cost in capital terms ranges from € 464 (Rs:58,000) (€1 = Rs:125). However the basic needs of an ordinary household during the electricity black out time is at least 2 to 3 fans and light, 1 refrigerators, television or computer which needs 3 to 5 kilowatts of electricity. Currently imported solar backup solution costs in between € 6000 to € 8000 (Rs: 7,50000 to Rs: 10,00,000)(exchange rate €1= Rs:125). These substitute products are not the good substitute backup electricity options available to the end user in the target market as they heavily rely on fossil fuel input which has high variable running cost.(Sahgal, 2009.)

People are not so much aware of the solar and wind energy sources and are also not readily available. Price has also played an important role in the non selection of solar and wind energy options as the solution normally carry a very high price and longer payback period as compared to available substitutes.

Bargaining power of suppliers

Bargaining power of current suppliers of renewable energy solutions particularly the solar solutions of the two cities are weak. The reason is due to high product cost, undifferentiated product range and lack of interest in the target market due to slow market growth and demand. Due to lack of market attractiveness current suppliers are not interested in the forward integration. Suppliers of the solar energy solutions are mainly all foreign technology companies. They have the financial resources to do the forward integration in the market.

Because of low demand of the solar energy solution current market suppliers are using local companies as distributors or agents to market their products. However the current agents and distributors are not doing enough to promote the products in

order to increase demand for solar energy products.

Bargaining power of buyers

Bargaining power of the buyers under current market situation is weak. Buyers are having weak bargaining power as they are price and quality conscious. The prices of solar energy solutions are very high due to import nature of the products.

Cheaper product will only be possible if they solar energy solutions can be manufactured locally. Current buyer's chances of backward integration are very limited due to financial constraints. Buyers are also in a weaker situation as they are not the bulk buyer of products from a single supplier. Lack of pressure on product price reduction, improving quality and warranty extension shows buyers weak position.

4.4 Renewable Energy industry analysis

The renewable energy industry, particularly solar and wind energy of the two cities were analyzed by the level of social awareness, people owning the renewable energy solutions, lack of marketing, lack of government support, low demand and high prices. Due to the above market features all the companies are doing different projects all over the country and foreign companies using local companies as agents for their products.

All the local solar energy companies are importing solar energy backup solutions. Imported solutions are of high prices as compared to currently in use backup solutions which are not environmental friendly. The capital price for current backup energy solutions such as diesel generator ranges between Rs: 1, 20,000 to Rs: 2, 00,000 (€1025 to €1710) as compared to solar energy backup solution start from at least Rs: 3, 00,000 (€ 2565 approx) onwards depending upon the quality and output. (Pakistan Solar Power, 2009.)

People who own diesel generators and Uninterruptable Power Supply (UPS) are mainly of the rich and medium class of the community. High income class people spend a considerable amount on high value products in order to maintain their status in the society. They prefer to buy branded products due to better quality and service they will get from the vendor. Due to lack of foreign players in the market they are using old traditional non-environmental friend backup solutions. Certain number of medium class are either using these traditional back up electricity option irrespective of environmental damage and high running cost or prefer to survive without electricity. Since capital cost of renewable energy technology is too high and having longer payback period, the end user is hesitant to adopt this technology.

According to respondents of all renewable energy companies and the Alternative Energy Development Board, people in the capital Islamabad and Rawalpindi have the purchasing power to buy these backup renewable energy solutions. Efficient marketing on the media will bring social awareness and positive attitude to these green energy solutions. They further explain that no company and government have made efforts in this regard to increase the demand and create social awareness. People have the habit of accepting new and better options if message is conveyed through a sound medium of marketing such as TV and daily national newspapers. They also suggest that government has to support the people in order to create and promote these energy solutions.

Based on the developing nature of the country and other external environmental factors, and due to no direct involvement of foreign companies in the renewable energy market, currently growth rate is very slow. Characteristics of a pre-mature phase of an industry such as lack of awareness, high capital cost and low demand are present in the renewable market of Rawalpindi and Islamabad. Due to unfavorable location for wind energy potential wind data is not currently collected. However solar energy potential is present due to favorable environment, due to which all the renewable energy companies in the two cities are dealing in solar energy backup solutions.

4.5 Market entry mode analysis

Modes of market entry were briefly discussed with all the respondents in order to carry out an effective and informative face to face interview. All the respondents were very cooperative and explained the subject matter in a friendly way and shared their knowledge and information.

Foreign Direct Investment

Foreign Direct Investment (FDI) can be done by wholly owned subsidiary, company acquisition and assembly operations. Currently market situation is not commercially and economically suitable to enter as wholly owned subsidiary or through company acquisition for the foreign companies. Political instability, world economic slowdown and Pakistan economic situations sole market venture will be highly risky option. Further reasons such as; limited market demand, expensive energy solution, developing nature of renewable market and lack of social unawareness.

Akhtar Solar, the only company is engaged in assembly operations of imported solar cells. Company assembled these solar cells in solar panels and sells them to local distribution networks. Company have the manufacturing facilities but due to the developing market phase and limited demand, high price constraints and lack of social awareness in end users, they have delayed the manufacturing operations. The company is doing assembly operations by importing raw solar cell. An assembly operation is considered beneficial due to zero import duty on import raw material and technology import in the country. Assembly operations is also facilitated by cheap skilled labour availability and low infrastructure cost.

Respondents of renewable energy companies dealing in target cities are not interested in assembly or manufacturing of wind turbines. This is due to lack of geographical potential for wind electricity generation. They emphasized that local manufacturing of wind turbines will reduce cost of turbines and might be sellable in well identified wind potential area of the country.

Manufacturing and assembly mode of entry is risky under current pre-mature market conditions. Foreign or local companies who are willing to take longer term benefits from this growing sector of the country in future. Government and Alternative Energy Development Board and companies dealing in renewable energy business are very much optimistic for renewable energy industry of the country. They are expecting huge demand for energy which will be needed to be fulfilled by renewable energy option in country.

However, manufacturing of solar energy solutions locally in the target market will lower the cost of product. Cheap factors of production include availability of cheap raw material, land and skilled labour. The government of developing countries such as Pakistan has created and develops industrial zones to promote local manufacturing and industries. Manufacturing will reduce the cost of solar energy solutions which will make it more affordable to general public. Pakistan's renewable energy market is lack in technology to produce cheap solar and wind energy solution for local industry needs but also to export and bring foreign remittance in country. But no company yet made any progress to avail these attractive low cost manufacturing options. (Jafri, 2009.)

Direct exporting

Direct exporting can be done as distribution, agency relationship, direct marketing, and franchising and management contracts. When compared with the above two entry modes of manufacturing and cooperative strategies which involve huge capital investment, these methods are less capital intensive and also carry much lower level of risk in order to mark an initial penetration into the market. Respondents show some positive signs to work as an agent or distributor of a foreign company who wishes to enter into the market. This is considered as an easy entry mode at premature stage.

One company named clean power is doing consultancy work in this sector for mainly solar projects. They do feasibility studies and surveys for the clients. They

do solar projects on turnkey basis. This company did not show any positive attitude for management contract agreement with any new entrant.

Respondents show more positive attitude in doing business as a distributor and as an agent for any potential foreign company who wants to introduce their renewable energy products, particularly economical solar energy solutions for both commercial and residential projects. But as all of the local renewable energy solution companies as they mentioned working as an agent for some foreign companies. If the prospective Finnish company will deal with any of them will not get benefits as they are already in business with some solar company.

Indirect exporting

Indirect exporting has less risk and low investment with subsequently less control. Piggyback, trading companies, export management companies and domestic purchase are the methods which come under this mode.

All the target companies dealing in renewable energy solution are dealing with overseas technology companies. Local renewable energy companies are importing solar energy solution from foreign exports through indirect exporting mode. The reason is the same lower risk involved, less capital and advantage of product reaching the market through established distribution network.

Respondents of local renewable energy companies show negative response for piggyback, trading companies and export management companies as these methods are not in operation in that small market. And economies of scale can be achieved through these methods only when the market is in a mature or growing stage.

Whereas in response to domestic purchase, respondents state mostly the renewable energy companies use this purchasing method to buy the required renewable energy solutions.

Cooperative strategy

There is no local renewable energy company in the Rawalpindi and Islamabad cities doing business operations as joint venture or strategic alliance under cooperative strategy. Sahgal Electronics managing director shows interest in joint venture operations with any foreign solar technology company interested to start operations in the city. Respondent explained that the company has the experience and knowledge of the solar technology and market but lacks in technology. He explained that foreign company can get access to different resources using the local partner in order to reduce risk in this newly emerging market. (Sahgal, 2009.)

4.6 Recommended Market Entry Strategy

Following section includes suitable renewable energy option solar or wind, entry mode, target customers and other relevant factors which will affect the Finnish renewable energy company in the target market.

Solar energy

Solar energy solutions are most suitable option for the two cities electricity shortage problem. Geographical and environmental condition of Rawalpindi and Islamabad are suitable for solar electricity backup solutions.

Market entry mode

Any Finnish solar energy company can enter the renewable energy market by doing collaboration. This can be done with any potential local renewable energy company to form the Joint Venture operations in the Rawalpindi and Islamabad. Both the partners in the collaboration will invest capital in the new venture according to their agreement.

Under the Joint venture mode, Finnish solar technology company will mainly invest with the technology and technical know-how. Local partner should finance this venture along with the Finnish solar company.

Under the joint venture operations, the manufacturing unit will be established to produce the solar energy solution using the technology and technical know-how of the Finnish solar company. The local partner will perform the management and marketing activities in the cities of Rawalpindi and Islamabad. Trained and skilled staff and purchasing of raw material locally will be performed by the local partner.

Joint venture is considered being the most suitable entry mode for the Finnish solar company as it will allow sharing risk and cost of investment with local partner. In addition, the Finnish company gets access to the local knowledge and local resources such as distribution system, raw material and human skills.

Manufacturing and distribution unit can be established in any industrial zone either in industrial zone in Islamabad. These industrial zones are established by the government of Pakistan in order to promote and facilitate the industries to grow. In the industrial zone government facilitate the new production units by giving the land on lease on cheap rates, rent holidays, cheap electricity and tax exemption etc. Raw material used such as 'quartz' and 'silica' which are used in the manufacturing of solar cell widely available in Pakistan. Quartz is available in northern area where as silica is in our rivers and other places in NWFP (North West Frontier Province). The cheap skilled labour will further reduce the production cost for the solar energy solutions manufactured locally. Manufacturing operations will put the joint venture in a monopoly position as there is no other company is performing manufacturing locally.

Both the target cities (Rawalpindi and Islamabad) should have one sale and service centers at the start of the operations in order to deal with the target customers. Highly trained local staff needed to be recruited in order to entertain and facilitate with the good value added services of the western and local to the potential cus-

tomers. The target customer of both the cities expects good customer service and value for money from the product and the company.

The potential target customers are the middle income class which is the largest segment in the two cities and the rich income class. The rich income class prefers to spend money on high luxury imported good in order to impress and stay high in the society. They spend considerably huge money on buying land for residential purpose in very posh and expensive areas. However middle income class spends considerable resources to build a decent with almost all facilities according to their living standard in the society. These are the two income groups who have the purchasing power to buy the solar energy backup solutions and currently relying on other means electricity backups.

Product price is an important aspect to be successful in very price sensitive market. Price ranges in between €1,500 to € 4,000 will be an ideal and competitive price depending upon the output of solar energy solutions. This price range is easily affordable by both the target income groups of the society. These prices are possible by doing the local manufacturing. Low prices for the products and low cost of production will give competitive edge over the existing retailing firms as well puts high entry barriers for the new entrants.

To capture this large target group of rich and middle income residents of the two cities aggressive marketing campaign is recommended. Marketing campaign will create awareness and demand of the solar energy solutions. Different mediums of publication and marketing can be done to promote and create awareness such as; products and services of the company can be presented on the national and private television channels, the radio and through the local cable operators in the two cities. The company should advertise their own leaflets of advertisement and also advertise in the main local and national news papers. Marketing and awareness can be done by highly trained local staff at the sale and service centers in the two cities.

Recommended Business Model

This recommended business model is based on the section 4.6 recommended market entry strategy. The graphical presentation of recommended business model as shown in the figure 8 below:

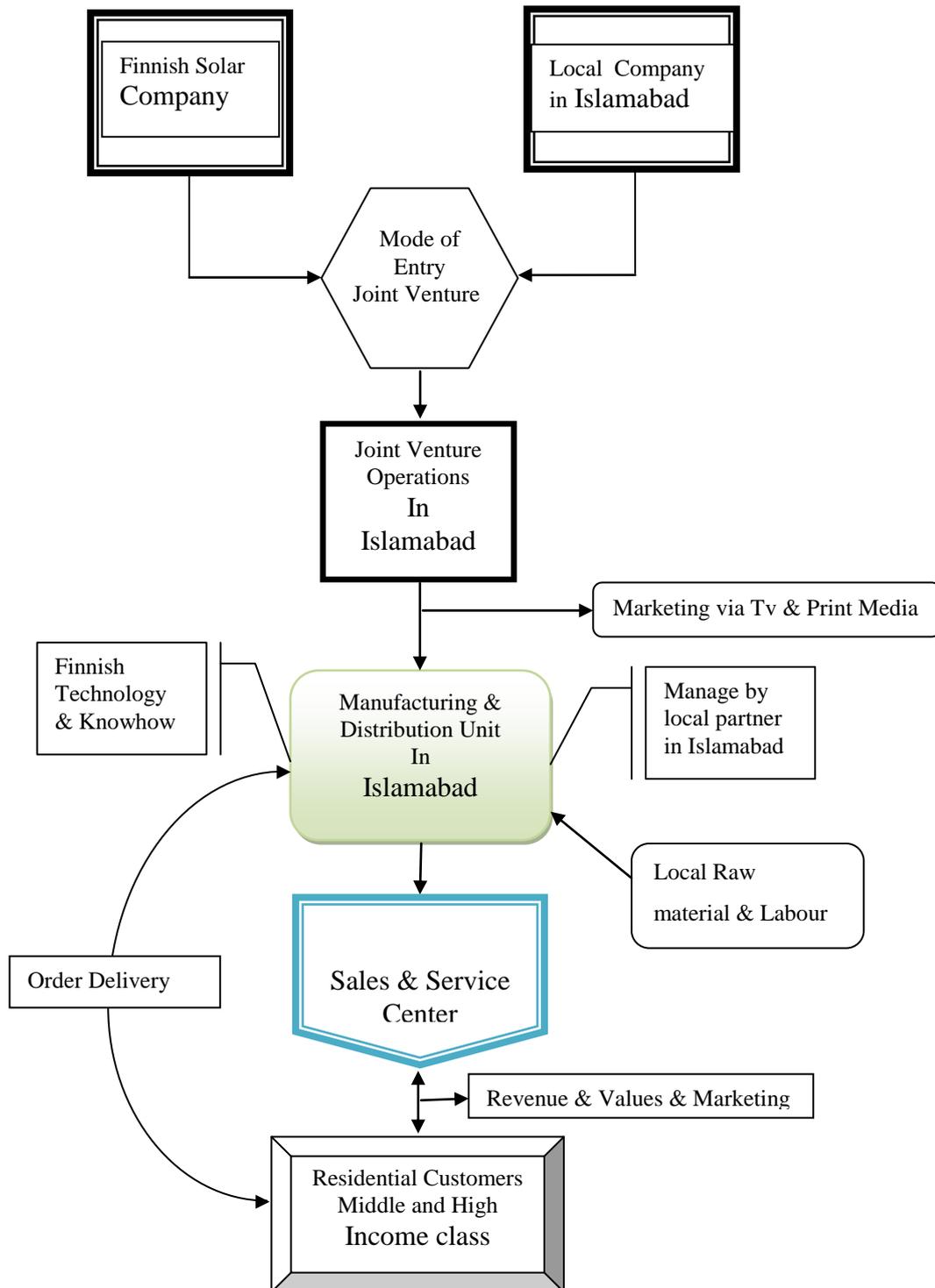


Figure 8: Proposed Business Model

5 CONCLUSIONS

The objective of this thesis was to find the most appropriate strategic market entry mode for the Finnish companies in the field of solar and wind energy. I selected Rawalpindi and Islamabad, Pakistan as the target cities and explored the solar and wind energy market. My limitations for this research study were to only focus on wind and solar energy option in Rawalpindi and Islamabad. Research results based on the market analyses of these cities will not show the potential of other big cities of the country. This research is not focusing on the environmental effects of solar and wind energy in target cities.

A qualitative research method based on semi-structured open ended questionnaires was used. In order to obtain detailed information and the data of solar and wind energy present situation and future prospects, face to face in-depth interviews were conducted. Selected target groups were interviewed keeping in mind the main objective of the study research. These selected target groups include the companies dealing in renewable energy backup solution in target cities, real estate developers, Alternative Energy Development Board, and the Chamber of Commerce and Industries. They were interviewed during the three months research time period from mid June 2009 till mid September 2009. All the interviews were around 1 hour long, in both English and Urdu languages. Notes were taken during the interviews and tape recorded.

The Alternative Energy Development Board and Chambers of Commerce and Industries were interviewed during the field research of the target cities. They were interviewed to know how these two important departments of the government of Pakistan provide their assistance to the local and foreign new companies entering in the solar and wind energy sector. The main reason to interview them was to know what the current government is doing in order to deal with their worsening electricity crises. What are the incentives the government is giving to attract the local and foreign investors in this newly emerging sector?

Renewable energy companies and real estate developers were selected for interviews based on pre-defined criteria of their scale of operation, goodwill within the sector of operations, financial, and technical stability. Renewable energy companies were interviewed to know about the current solar and wind energy situation within selected cities. It was also important to interview these local renewable energy companies to analyse the local environment for prospective Finnish solar and wind energy companies. This analysis will provide the framework to find the most appropriate market entry mode for Finnish solar and wind energy companies. Real estate developers in target cities were considered as potential future customers for prospective Finnish solar and wind energy companies entering the market.

During the field research in Rawalpindi and Islamabad, it was found that all the renewable energy companies selected are not currently dealing in wind turbines. Few companies did few projects in other parts of the country in respect with micro wind turbines. The main reason given by the respondents was that within Rawalpindi and Islamabad wind speed is not substantial.

However, respondents mentioned an area 100Km away from the two cities named as “Kallar Kahar” which has been identified as an ideal geographical location to generate electricity from wind at farm scale. A micro wind turbine of 40kw has been successfully demonstrated and it laid the path to install 160 turbines of 600kw each to generate at least 100 Mw from this wind farm.

Solar energy solutions have very promising future within the two cities Rawalpindi and Islamabad. Six renewable energy companies dealing in solar backup energy solutions were selected as target groups for this field research. All of them have different target end users. They are also engaged in different projects across the country with different reputed clients. All companies are importing these solar electricity backup solutions from a few specified industrialised countries. Most of the local companies are working as an agent for the foreign companies for their technology products.

Akhtar Solar is the only company dealing in assembly operations in the target cities. Raw solar cells are imported by the company from only one specified European country. The company has the manufacturing facilities but due to limited demand, the company has not yet started manufacturing locally. The company only deals in finished solar panels which they sell to local companies. The company itself is not directly engaged in dealing with the end users of the city with their products and services. The company is enjoying zero tax rates on importing raw material used in renewable energy.

These external market factors are considered important to understand the business environment of the complex target market demands. Social and cultural issues are important to know how the family decide and influence others members to purchase high value products. Society at large considered providing basic necessities of life such as uninterrupted electricity, good health and education for all is the responsibility of government. But due to lack of government financial support and lack of promotional and awareness campaign by renewable energy companies and government, society is forced to rely on same traditional backup electricity means which are available in the market.

The legislative issues have been eased by the government in order to promote renewable energy industry in the country. For this purpose the government of Pakistan has offered many incentives including zero import duty on renewable energy machinery and products. A small import duty has been recently levied on assembled backup renewable energy solution as 5% tariff on these products. To encourage local manufacturing and assembly operations, 90 % capital allowance is offered. To further motivate the foreign investment, government puts no limitation on foreign remittance abroad.

The key economic indicators like GDP over the last decade have shown a significant growth rate and it has been maintained throughout the period. To sustain the recent economic growth and to explore natural resources available in country, government has taken positive steps to encourage the foreign investor to invest in the economy.

The political situation is improved since the restoration of democratic government in Pakistan. This stability has opened the door for foreign investors to invest in the country and avail the benefits of emerging opportunities.

Basic infrastructure and technology is present in the country. Skilled technical workforce is available at very cheap price. The country needs advance technologies and machinery to take benefit of rich natural resources present in country. However new technology such as “net metering” needs to be introduced by the government to promote the end users to generate solar electricity.

The market situation was analysed using competitive five forces method. Now I can conclude that rivalry among the firms is not fierce because of very few local renewable firms dealing within the two cities. All of them are targeting limited end users all across the country. Due to limited financial resources these local companies are not making enough efforts of marketing to attract more customers.

The threats of new entrants are not high too. Even though the renewable energy market is wide open and the government is promoting the renewable energy for their increasing current and future energy needs. The Government is facilitating to import renewable energy material and technology by having zero import duty, 90 % capital allowance on the renewable machinery in the first fiscal year. But the entry barriers are high in terms of slow market growth, low demand, high capital incentive market, lack of public awareness and high product cost.

Threat of substitute products is high. Solar energy backup solutions are currently having high prices and longer payback period. However the traditional backup such as Uninterrupted Power Supply (UPS), gas and diesel generators are widely available in the market. These readily electricity backup solutions have high running cost so they are not considered to be the best alternative electricity backup solutions.

Bargaining power of current suppliers of renewable energy solutions particularly the solar solutions seems weak. The reason is due to high product cost, undifferen-

tiated product range and lack of interest in the target market due to slow market growth and demand. Due to lack of market attractiveness current suppliers are not interested in the forward integration. Suppliers of the solar energy solutions are mainly all foreign technology companies. They have the financial resources to do the forward integration in the market. Suppliers are using the local renewable energy companies as agents and distributors to market their solar energy solutions. But suppliers are not influencing the agents/distributors to market the products in order to increase market for the products.

Bargaining power of the buyers under current market situation is weak. Buyers are having weak bargaining power as they are price and quality conscious. The prices of solar energy solutions are very high due to import nature of the products. Cheaper product will only be possible if they solar energy solutions can be manufactured locally. Current buyer's chances of backward integration are very limited due to financial constraints. Buyers are also in a weaker situation as they are not the bulk buyer of products from a single supplier.

Currently renewable energy industry is at the pre-mature phase due to the developing nature of the economy. All the renewable energy solutions are imported from foreign countries, having high capital cost and longer pay back period as compare to traditional means of backup electricity generation options. Lack of marketing and awareness in the society is also one of the reasons for low demand and slow market growth of this sector. These pre- mature market features are present in renewable energy market of Rawalpindi and Islamabad. Solar and wind energy solutions are also passing through the same pre-mature phase in the two targeted cities. Aggressive marketing campaign and competitive prices of the solar energy products are critical to create the demand.

It was found out the most appropriate market entry mode is for Finnish solar company is to set up a joint venture with the local partner in the Rawalpindi and Islamabad. This will be beneficial in sharing risk and cost of investment in the target market with the local partner. Manufacturing operation will be set up under the joint venture. Technology and technical know-how will be from finish solar com-

pany and finance will be from the local partner. It will give access to local resources, distribution network and local knowledge of the market such as culture and language. Manufacturing unit will be established in the industrial zone in Islamabad to get various incentives provided by the government. Local partner will manage the operations and share the cost and profit.

The target potential customers are rich and middle income class of the two cities. These two income classes, particularly the middle income class representing larger portion of the segment needed to be targeted with affordable price of the solar energy products. This is possible to because of low cost of production of solar solution. Middle income group particularly very price sensitive, affordability of the solar energy backup solution is very critical to be successful in the market.

Due to lack of awareness among the end user for these renewable energy solutions and lack of publication by the government and other company's massive marketing campaign will be required. This will create awareness and as well increase demand of the company products. Cable operations, television, radio and newspapers are the most influencing modes to advertise.

Due to lack of foreign companies in the solar energy solution in the target cities, new business ventures own sale and service centre is recommended to facilitate the customers. Highly trained staff will serve the potential clients will create and add value to companies image.

The research was mainly focussed only in the two cities (Rawalpindi and Islamabad) based on the two renewable energy solutions i.e. solar and wind energy only. The market analysis was done based on the information gathered from the local renewable energy companies in the two cities, the Alternative Energy Development Board and the Chamber of Commerce. This was to find the most appropriate market entry mode for the Finnish prospective renewable energy companies. The finding of this research is not applicable in other cities of Pakistan. Therefore I would recommend further research in the solar and wind energy

solutions in other big cities of Pakistan, for prospective Finnish solar and wind energy companies.

Based on the market analysis and the field research, the most appropriate mode of market entry has been defined with the potential target. This mode of entry was given preference based on future increase in demand and growth in the renewable energy market of the country. Because this research was only to define the most appropriate entry mode, issues faced in the operational level was not an objective of the study. Therefore data and information was not collected from the operational point of view. In this regard, I would suggest further research in the field of operational plan.

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APPENDICES

Appendix 1: Interview questions for Alternative Energy Development Board (AEBD), Islamabad, Pakistan

Appendix 2: Interview questions for companies dealing in renewable backup energy solution in two target cities

Appendix 3: Interview questions for main Real Estate Developers in two cities

Appendix 4: Interview questions for Chambers of Commerce and Industries in the city

Appendix 5: Pakistan's basic and economic fact table

Appendix 1: Questionnaire for Alternative Energy Development Board

Q. How the department is facilitating the local renewable energy companies in country?

Q. What sources of Alternative Energy exists in Pakistan.

Q. What sources of AE are under consideration in the province of Punjab and within target cities?

Q. Which source fits best in terms of suitability, feasibility and adoptability in present environment of the country?

Q. Where the wind energy based solutions are ranked in renewable energy generation options?

Q. Had AEDB undertook any projects of Wind energy solution in Punjab

Q. What sort of facilitation is provided by Government and the department of AEDB to local and foreign investors in renewable electricity generation?

Q. Whether climate is feasible for this particular type of wind and solar energy solution.

Q. What facilitation is provided for direct foreign investment and for other modes of entry?

Q. Geographical indication of areas where wind and solar electricity generation will be most suitable. (Maps or Wind Data available)

Appendix 2: Interview questions for companies dealing in renewable backup energy solution in two target cities

- Q1. How long the company has been in this renewable energy solution business in the target market?
- Q2. Do you have the skilled labor to provide services to your customer?
- Q3. What are the energy generating products in your portfolio?
- Q4. Are the customers satisfied with your portfolio of energy back up options?
- Q5. Do you know about the wind turbine as a bank up energy option?
- Q6. Do you consider adding wind turbine in your product portfolio for back up energy option for your customers?
- Q7. Which home appliance the end user wants functional during black out time of electricity from grid?
- Q8. What is the price range of the backup energy products?
- Q9. Do you think customers awareness in regards with environmental issues while selecting the backup energy options?
- Q10. What is the preference of the end user in terms of choosing the product?
- Q11. Have the end users asked for the electricity generation option from wind turbine?
- Q12. Does your company manufacture the renewable device or purchase?
- Q13. Where do you purchase current power back up solutions?
- Q14. Does the government facilitate organizations (like yours) doing business in renewable energy business either in import or manufacture?
- Q15. Would you give preference to purchase the backup solutions like wind turbines if provided by foreign company based in the local market?
- Q16. What is the influence of government policies on your business?
- Q17. Who are the major buyers of your products (which income group)?
- Q18. What is the future prediction for the renewable energy solutions demand into the market?

Appendix 3: Interview questions for main Real Estate Developers in two cities

Q How long you have been in this real estate business?

Q How many projects currently have?

Q What factors customers consider when they choose your company?

Q What are the services you are providing to your customers in your projects?

Q What factors you consider while developing the site for construction of houses for the end users?

Q What is the current source of electricity your end users have?

Q What is the problem faced by your customers with regards to current electricity shortage problem?

Q Have you ever considered to generate your own electricity as a value added services to the customers?

Q If yes do you prefer local power supplier or foreign high technology supplier?

Q What will be your selection criteria for choosing the power supplier (partner) in your projects?

Q Would your company is or will be interested in any kind of business venture for electricity generation for your project particularly from renewable energy such as solar and wind?

Q How would you like to supply the electricity to your customers?

Appendix 4: Interview questions for Chambers of Commerce and Industries in the city

Q What is the current and future government policies in encouraging foreign direct investment particularly in energy sector?

Q How your organization assists a new foreign investor in the energy sector in target city?

Q What are the challenges in setting up foreign company in Pakistan?

Q What are the legislative issue in foreign direct invest to be considered in?

Q What are incentives offered by the governments?

Q What are the possible risks in establishing the business in energy sector in target city?

Q What kind of role Chamber would play there in case a foreign company is interested in investment?

Q. Is government doing enough to promote foreign investors to invest in renewable energy sector?

Q. What is the historical market entry mode in renewable energy industry are used by foreign companies in Pakistan?

Appendix 5: Pakistan' Basic and Economic Fact Table:

Basic Facts Country		Islamic Republic of Pakistan	
Independence Day	14th August 1947	Founder of Pakistan	Muhammad Ali Jinnah
Geographical Location	South Asia	President	Asif Ali Zardari
National Language	Urdu	Prime Minister	Syed Yousuf Raza Gilani
Official Language	English	Capital	Islamabad
Literacy	53 %	Religion	97 % Muslim
Provinces	Main Provincial Cities	Currency	Pak Rupee
Punjab	Lahore, Islamabad, Rawalpindi	Geographical Area	796,095 Sq. Km
Sindh	Karachi, Hyderabad	Population	1.68 millions (est 2009)
Balochistan	Quetta	Total Labour Force	46.48 millions
North West Frontier Province	Peshawar	Employed Labour Force	43.22 millions
Economic Indicators			
Per capita Income(2008)	\$ 1085 Pa	Main Imports	
Inflation (2009 Expected Average)	21% Pa	Industrial equipments, Vehicles, Chemicals Steel, Petroleum products	
GDP Rate (2009 Expt)	2.0% Pa	Main Exports	
GDP By Sectors Contribution		Cotton, textile good, Carpets, Handicraft,	
Agriculture	50.1%		
Industry	46.1%	Main Air ports	
Services	38.6%	Karachi , Lahore , Islamabad& Peshawar	
Electricity Energy Mix		Electricity Generation Capacity	22763Mw
Thermal: Gas	47.8%	Electricity Shortfall (2008)	4000Mw
Coal	15.6%	Electricity Consumption by Sectors	
Oil	0.8%	Domestic	50.1%
Hydropower	33.5%	Industry	46.1%
Nuclear	2.4%	Agriculture	38.6%
Total	100 %	Total	100 %

(Ministry of economic affairs and statistics 2009: Arif, 2008 & Ministry of Finance, 2009.)