MARKET ENTRY STRATEGY FOR SOLITEK INDUSTRY OU TO UNITED KINGDOM'S PHOTOVOLTAICS MARKET

A Thesis

Presented to the Faculty

of International Business and Communication programme at ISM University of Management and Economics

in Partial Fulfilment of the Requirements for the Degree of

Bachelor of International Business

by

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January 2015

Vilnius

Summary

[Karbočius, P.], Market Entry Strategy for Solitek Industry Ou to United Kingdom's Photovoltaics Market [manuscript]: Final Bachelor Thesis. International Business and Communication. Vilnius, ISM University of Management and Economics, 2015.

The aim of this thesis is to develop a market entry strategy that would allow the Lithuanian Solar PV producer SoliTek Industry OU to enter UK's photovoltaics (PV) market. To achieve this aim, following objectives were set:

1. To analyze the current SoliTek Industry OU situation by identifying and evaluating the strengths and weaknesses;
2. To analyze and evaluate the UK solar PV market;
3. To identify and apply a suitable market entry strategy framework;
4. To conduct empirical research in order to identify the most prominent UK solar PV market specifics and success factors for developing a market entry strategy;
5. To provide managerial solutions in accordance to theoretical framework and collected information by suggesting a market entry strategy.

Research methods. Internal and external analyses as well as qualitative semi-structured interviews with 9 representatives from the different solar PV market segments were carried out to get a comprehensive view on the UK's solar PV market specifics in order to develop a market entry strategy for SoliTek Industry OU.

Results. Research revealed that price, product exterior, perceived quality, brand image in an international context, and local presence of the company are the attributes that the customers base their purchase decisions on. The last part of the paper provides the managerial solutions on how these attributes should be adhered to when developing a market entry strategy according to the selected theoretical model.

Keywords: Market entry strategy, photovoltaics, exporting to the United Kingdom.

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Introduction

BOD Group, a well-established Lithuanian pre-recorded optical disc manufacturer currently is in a difficult situation - global optical disc industry is gradually declining. To tackle this problem, BOD Group has been trying to enter new industries among which is a photovoltaics[1] (from here on referred to as "PV") industry. For this reason in 2013 BOD Group established solar cells and modules production company SoliTek Industry OU (hereinafter "SoliTek") - joint venture between BOD Group and Viasolis.

BOD Group has ambitious goals for SoliTek aiming that the solar production would account for 89% of Group's revenue by 2016. However, as a new brand SoliTek has problems in appealing to their customers in the international markets. Although technologically advanced, the brand is unknown and thus is often associated with inferior quality. In addition to that, perception towards Eastern Europe in general is rather negative due to formerly being a part of Soviet Union which causes difficulties in gaining trust in the international markets.

Lithuanian market is too small for SoliTek, 95-98% of production is planned to be exported. Company identifies UK market as being attractive for its growth rates, potential and attitude towards renewable energy, yet the aforementioned issues are especially visible. Furthermore, SoliTek has limited market knowledge thus finds it difficult to choose which market segments should be targeted, what distribution channels are to be selected, and how the products should be positioned. Due to these facts this paper would serve as guidelines for company to become more familiar with UK PV market and achieve organizational objectives easier.

Taking everything into consideration, this paper seeks to provide support for SoliTek in solving the following **research problem** – what market entry strategy would allow

[1] Photovoltaic (*photo* – Greek for "light", *volt* – unit to measure electric potential at a given point) is a process of converting solar radiation into electricity (European Photovoltaics Industry Association).

SoliTek Industry OU to enter UK's photovoltaics (PV) market. Therefore the **aim of the thesis** is to develop a market entry strategy that would allow SoliTek Industry OU to enter UK's photovoltaics (PV) market.

Objectives of the thesis:

1. To analyze the current SoliTek's situation by identifying and evaluating the strengths and weaknesses;
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4. To conduct empirical research in order to identify the most prominent UK solar PV market specifics and success factors for developing a market entry strategy;
5. To provide managerial solutions in accordance to theoretical framework and collected information by suggesting a market entry strategy.

Research methods – In order to understand the market situation and the main reasons for its development, qualitative analysis was chosen. Interviews of the experts and various stakeholders of the market – local and international solar PV manufacturers, suppliers of components for solar PV systems, governing bodies and investors - were carried out to gather primary data for the empirical research.

Practical value of the thesis – As the company is eager to learn about the situation and the competitive environment in the UK, thus the thesis is expected to provide insights to what the customer demands and what approach would be better in order to satisfy those demands. In addition to that, this paper could provide a useful outside opinion which could later be used as a base for decision making for the upper level management. Managerial solutions should help to understand how these approaches can be implemented.

Logical structure of the thesis – Thesis is divided into three parts. In the first part of the paper situation analysis combining both internal and external analysis were carried out to

provide an overview about the company, environment in which SoliTek is operating and main challenges. In addition to that, literature review is provided to identify the suitable framework for foreign market expansion. Second part of the paper was dedicated to the empirical research. Qualitative research was made including semi-structured interviews with various UK's PV market players and experts. In the last part of the paper managerial solutions were provided to answer the question what market entry strategy should SoliTek choose and how should the strategy be implemented.

Situation Analysis

This part of the paper is aimed to describe the current situation of SoliTek by providing the background to the establishment of the company, identifying the major strengths and weaknesses, and discussing the issues that SoliTek is currently facing as well as analyzing the external environment that the company operates in. Information provided in this chapter is important as the identification of current position of the company in an international context is the basis for establishing a competitive advantage over the competitors in the market. Furthermore, literature review is carried out to find the suitable theoretical framework for the development of a market entry strategy.

Internal analysis

Business identification. BOD Group is a privately owned joint stock company established in 1998 in Vilnius, Lithuania under the name 'Garsu studija', was this first micro cassette manufacturer in the Baltic States. Gradually, as the technological capabilities of the market advanced, the name of the company was changed to Baltic Optical Disc (BOD) and the production lines were altered to produce CD optical discs, introducing DVD discs in 2005 and Blu-ray (BD) discs in 2011.

BOD Group currently is a parent company uniting seven subsidiaries[2], core business being industrial disc replication services. However, due to declining demand for physical optical discs and increasing popularity of online and VOD (video on demand) platforms, BOD Group recently decided to enter two new industries – photovoltaics and ophthalmology.

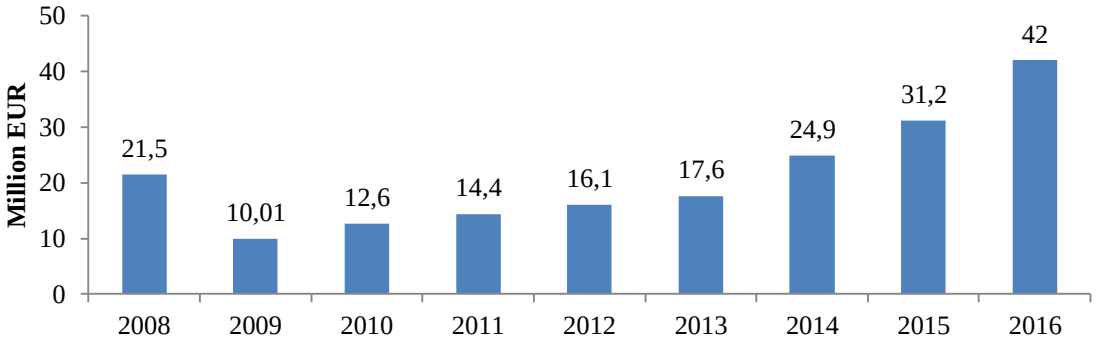

Figure 1. *BOD Group turnover 2008-2016*

Although turnover for the BOD Group is planned to increase to around 42 million EUR by 2016, this is not due to strong contribution of disc replication. Company has identified that overall disc replication market decreases by 15-20% each year, thus by 2016 optical disc production will account only for around 5% of total turnover of BOD Group or around 2,1 million EUR, whereas solar production is expected to account for nearly 89% of total BOD Group's sales.

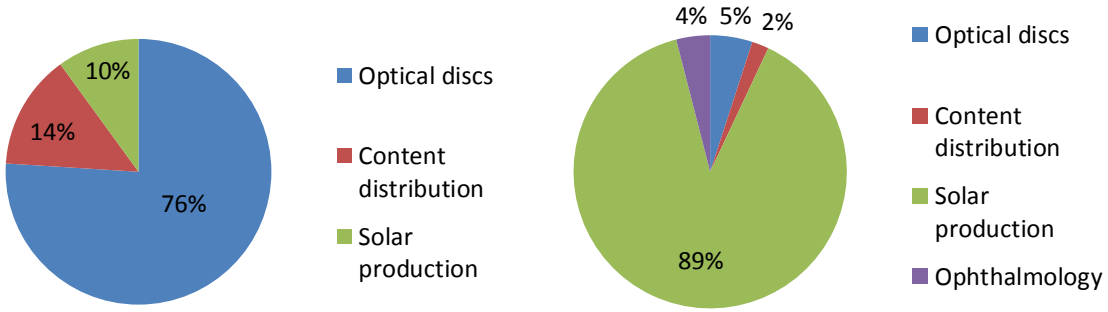

Figure 2. *Sales by Products 2013-2016*

[2] BOD Group subsidiaries – Baltic Optical Disc (BOD), BRD, Prior Entertainment, SoliTek R&D, SoliTek Cells, Baltic Optical Dimension, and a joint venture with Viasolis – SoliTek Industry.

Product specifics. Even though such predictions may seem optimistic, BOD Group is confident in SoliTek's success due to multiple reasons. Firstly, SoliTek is an especially innovative company producing Glass/Glass type of multi crystalline (mc-Si) solar cell PV modules. In fact, SoliTek's Slim-line Glass in Glass mc-Si module solar panel was awarded as one of the four most innovative products in an international Intersolar Exhibition in 2014.

Such modules are superior to current Glass/Plastic alternatives due to their durability, longevity, and physical appearance. Despite the fact that SoliTek is not the sole producer of such modules, it is the only one worldwide to use specific PIB rim technology to protect the edges of the module. That way module does not require any additional frame (such type of modules is called "frameless") while having the better durability. This results in more than 30 years of longevity of SoliTek's products compared to conventional solar panel PV systems with average life span of 20-25 years. In addition to that, the technology also allows SoliTek to provide longer warranties for its production which improve the perceived quality of the product. Such innovation is expected to have a wide application in Building Integrated Photovoltaics (BIPV) as it combines the high efficiency of mc-Si solar PV panel with the integrative abilities of thin-film technology which is designed to fit the needs for BIPV installations.

Other important strength for SoliTek is PERC technology which allows producing higher efficiency modules and PID-free (Potential Induced Degradation) technology which minimizes power-induced loss of output. Even though these technologies are not unique in an international context, they are starting to become a benchmark for multi-crystalline high efficiency (HE)[3] solar PV modules. In fact, according to the predictions of NDP Solarbuzz, by the end of 2018, mc-Si HE solar PV modules will eliminate the demand of regular mc-Si solar PV modules (NPD Solarbuzz, 2014).

[3] High-efficiency multi-si cell is cell with efficiency above 17.8% (Energy Trend, 2014)

Moreover, SoliTek has very flexible production lines which allow the company to provide customized solutions in terms of shape, dimensions, colors, and transparency. All these features are highly valued in the Building Integrated Photovoltaics segment (BIPV), and, considering the standardized products offered by the biggest market players, can become the basis for the competitive advantage for SoliTek.

Issues. However, despite all the strong sides, company is facing certain issues. Starting with the produced cells, although the mc-Si solar PV cells are the preferred choice for large scale installations, competitive environment is rather hostile for a new entrant as the market is already dominated by the biggest global players. The segments which have the highest potential for SoliTek are the residential consumers and the commercial segment. Such customers, unfortunately, have very limited knowledge in solar PV market and can choose either monocrystalline cells which has higher efficiency by itself yet is also more expensive, or multi crystalline – the type which is produced by SoliTek. With current technology monocrystalline cells are more efficient, thus many residential customers base their purchases on such knowledge. One thing, though, that they fail to understand is that due to specific octagon shape of monocrystalline PV cell effective surface of the module is reduced making it equally as efficient as the multi crystalline PV modules which are considerably cheaper. Due to this fact SoliTek may find it difficult to sell their products as customers have to be educated and convinced with every purchase.

One other important issue for SoliTek is low brand awareness. As a new brand SoliTek finds it difficult to gain trust from customers especially in UK market which is especially trust-based. In addition to that, geographical location is also an important factor contributing to such situation. Eastern Europe is generally perceived as the former Soviet Union, thus creating an image of being technologically underdeveloped and not the most trustworthy. Due to this fact the production of SoliTek is marked as "made in EU" to increase

the positive associations regarding the quality of both the product and the company.

Taking into consideration the strengths of SoliTek, the company has all the prerequisites to successfully compete in the market with their product portfolio. However, it is rather difficult for a new brand to enter already established industry even with the best product. To increase the chances for success a thorough analysis of the market in question is essential to identify the main trends and success factors in the market and prepare the plan of action to tackle the prevailing problems and capitalize on the strengths.

External Analysis

This part of the paper provides the overview of the United Kingdom Solar PV market. The information discussed in the following chapters includes the analysis of macro environment, competitive landscape and customer profiles.

Macro environment analysis. PESTEL analysis was chosen to evaluate the geographic market from different perspectives: political, economic, social, technological, environmental and legal. It helps to reveal threats and opportunities for SoliTek when operating in the UK market.

Table 1.

PESTEL analysis for the UK's photovoltaics industry

PESTEL ANALYSIS	
Political	1. Increasing euroscepticism; 2. Governmental support schemes for solar energy production; 3. Obligations for 2020 – 20 GW of solar PV energy installed.
Economic	1. Global financial crisis – longer than in neighbor countries due to strong dependence on financial sector; 2. Increasing electricity prices.
Social	1. Increasing consumption of solar energy; 2. Negative perception towards Eastern Europe.
Technological	1. New solar PV solutions (BIPV, PID-free, PIB rim, PERC) allow entering new industry segments; 2. Poor power grid conditions;

	3. Technological development and decreasing raw material prices allows for a significant price reduction on solar PV cells.
Environmental	1. Kyoto protocol leads to shifting from high carbon-emitting energy sources to renewable energy; 2. Chemicals used in a production of certain types of PV products are considered to be hazardous.
Legal	1. Certification system established to ensure efficient usage of solar PV technology; 2. Regulation on Nearly-Zero Energy Buildings (NZEB) by European Commission.

Note. Developed by author.

Political factors. According to AMB Country risk report 2014, the UK is a CRT-1 country indicating that political, economic and financial system risk is very low minimizing country risk. (A.M. Best Company, Inc., 2014) CRT-1 countries are categorized as being predictable and transparent in their legal environment, legal system and business infrastructure; having sophisticated financial system regulation with deep capital markets and mature insurance industry framework. However, in recent years euroscepticism increased in UK as Conservative party and many Britons are starting to question benefits of European Union to UK (The Economist, 2014). If such trends remain, there is a possibility that Britain may decide to exit the EU at a referendum in 2017, which would result in trade barriers for companies trying to sell to UK market.

From the company specific level, among the most important political factors is the fact that UK's governmental support the production of solar energy. There are a number of incentive schemes introduced by the UK government to support different customer target groups. Figure 3 illustrates the distribution between different support schemes.

As can be seen from the Figure 3, the most prevailing incentive schemes are both small and large scale FIT schemes and Renewable Obligations (RO).

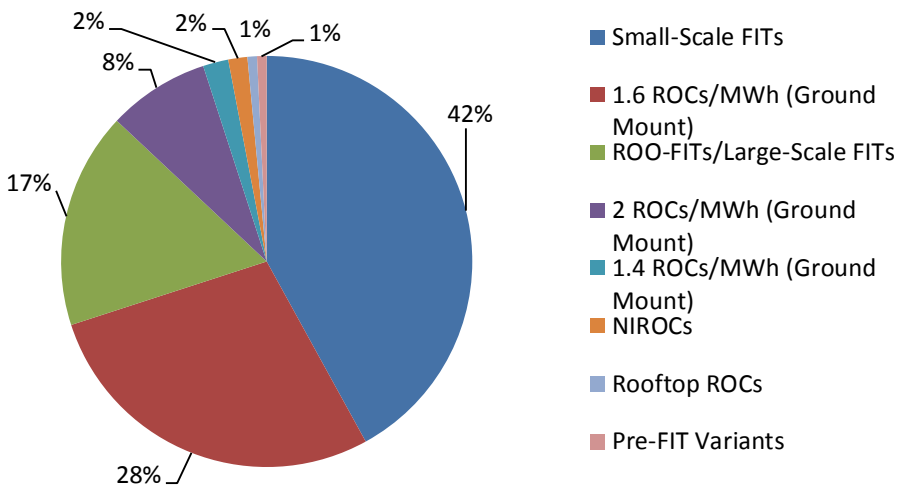

Figure 3. *Distribution of tariff incentive schemes in 2013*

Source. NPD Solarbuzz (2014).

In 2002 the UK Government introduced Renewables Obligations (RO) which were intended to become an incentive for large-scale electricity producers to shift to renewable energy (Department of Energy and Climate Change, 2012). Producer had to declare the level of expected portion of renewable energy to be produced to the Office of the Gas and Electricity Markets (Ofgem) and is granted a certificate (ROC) which can then be traded to the suppliers for a premium to their wholesale price. The amount of ROC issued by the Ofgem depends on the expected level of energy produced and the technology used to produce it. Currently a supplier using solar PV needs 1.6-1.7 ROC/MWh (Department of Energy and Climate Change, 2013). Interesting thing about ROCs is that currently they do not have a fixed price and are traded as commodities – price is the matter of negotiation. According to the Department of Energy and Climate Change (DECC), in 2013/2014 ROC price was roughly 46£/ROC.

However, such initiative is expected to be closed - from 2017 DECC will stop issuing ROCs to new electricity generators, ROC price is planned to be fixed from 2027 and the initiative will end at 2037 (Department of Energy and Climate Change, 2012). Such decision

was made as the majority of funding went as a profit for large investors, while the goal of DECC is to promote the usage of low-carbon energy generation and not financial gains.

In addition to the RO scheme that is aimed at the major electricity providers, the Government of United Kingdom also aims to provide incentives for low-scale renewable and low-carbon electricity generation for residents, companies and investors with Feed-In Tariff Scheme (FITS). The scheme is designed to be an incentive to switch to renewable energy with a possibility to sell certain amount of the energy produced. The system works in several ways:

1. Generation tariff is paid for the production of electricity using renewable sources;
2. Export tariff is paid for selling the energy in to the main power grid.
3. Deemed export tariff is paid for installations less than 30 kWp assuming that 50% of electricity generated is sold to the main grid regardless of actual amount.

The important advantage of the scheme is that the tariffs are index – linked which mitigates the risk of inflation. At current regulations the tariffs for such energy ranges from 6.38p/kWh to 14.38p/kWh if the producer adheres to all the requirements of the Microgeneration Certification Scheme (MCS) (Energy Saving Trust, 2014). The tariffs received depend mainly on the property's Energy Performance Certificate (EPC) rating if the applications are not ground - mounted (Energy Saving Trust, 2014).

Both RO and FITS made a severe impact on the solar power industry in the UK. From virtually no solar energy produced until 2010, in 2014 United Kingdom is the leading country in Europe according to annual solar PV capacity installed. In fact, in 2013, the UK installed more solar panel PV modules than Italy, and together with Germany become the main drivers of the European market (European Photovoltaic Industry Association, 2014). The growth rate

remained high in 2014 as unprecedented 2.22-2.23 GW of solar PV systems were installed (NPD Solarbuzz, 2014) in the UK resulting in total of more than 5 GW of solar power capacity. Total output is still low compared to the most developed European markets such as Germany (total of 36 GW of solar PV installations), however the growth of UK market is significantly higher. According to the plans of the UK government, by 2020 country is expected to have a total of 20 GW of systems installed (Department of Energy and Climate Change, 2014). However, the implementation of such goals can become challenging as most of the installations are solar farms (capacity higher than 5MW), whereas industrial and residential segments are growing at a slower rate. Taking into consideration the plans to reduce funding for installations exceeding 5 MW, the growth rate should slow down.

Economic factors. From economic point of view, global financial crisis had a big impact for UK as it is highly dependent on financial sector and service sector which accounts to 2/3 of total economic output (A.M. Best Company, Inc., 2014). According to Eurostat, UK's GDP reached its pre-crisis level only in 2011, whereas France and Germany managed to recover a year faster. This resulted in lower levels of disposable income for the consumers, which had an effect on PV industry – taking into consideration that not only is the solar power is becoming cheaper than centrally provided electricity, excess energy can be sold to the market making solar power even more desirable.

Another important factor for the development of solar power industry is increasing electricity prices. According to the Department of Energy and Climate Change (2014), the price for centrally provided electricity increased by 21.7% during 2010 - 2013 in the UK. This brings the industry closer to the grid parity where the levelized cost of electricity generated from alternative sources is equal or lower than centrally provided electricity which might serve as an incentive that could drive the growth of the market.

Social factors. Moving on to social factors, even though the geographic location of United Kingdom is not the most suitable for solar energy production, such way of producing energy is starting to gain popularity due to changing view towards it and successful implementation of various incentive schemes.

On the other hand, country-of-origin effect remains an important social trend. Even though the large-scale investors tend to place lower emphasis of the country of origin of the product, local residents are still base their decisions on this information. According to the representatives of the Embassy of Lithuania in the UK, Lithuania to British society is occasionally associated with high levels of corruption, lack of modern technology or reliable suppliers due to previously being a part of Soviet Union. Western countries, on the other hand, are considered to be credible and stable suppliers, thus many local companies or residents are reluctant to even contact companies from Lithuania and would rather choose local companies or suppliers from Western Europe.

Technological factors. From technological perspective, technological development and decreasing raw material prices allowed for a significant price reduction for solar PV systems. Comparing the spot prices for polysilicon used for cell manufacturing during the 2008 and 2014, prices have dropped from 500 $/kg (approx. 418.2€/kg) in the peak period of 2008 to around 40 $/kg (approx. 33.5€/kg) in 2011 (Landers, 2011) to an average of 20.2$/kg (approx. 16.9€/kg) in December, 2014 (Energy Trend, 2014). These reductions of spot prices were attributed to increased global supply of polysilicon and had a direct effect on the multi crystalline PV module prices – prices decreased from 3.43 $/Wp (approx. 2.87€/Wp) in 2008 (Price & Margolis , 2010) to an average of 0.575 $/Wp (approx. 0.48€/Wp)in December, 2014 (Energy Trend, 2014). Polysilicon prices are expected to decrease by 15-20% by 2018, which would allow a significant savings in material costs and should provide for a price reduction for solar PV installations (Annis, 2014). According the European Photovoltaics

Industry Association (2011), solar PV generation costs are expected to decrease by 50% until the year 2020.

In addition to that, increased installed solar PV capacity raised significant technological challenges for the National power grids as they now find it difficult to handle increased energy supply. Currently, according to the Ofgem (2014), the UK has only between 2-8% of excess grid capacity during the peak demand period, thus an expected increase of solar power generation in 2020 will require heavy investment into the reconstruction of the grid.

Moreover, new technologies allow solar PV panel producers entering new construction industry segments. With current Building Integrated Photovoltaics technology solar panels can be used as a building material for glass type buildings. In addition to that, currently produced solar cells can generate electricity even in such geographical locations where sun intensity is lower. This provides the opportunity for companies to offer products to the UK market.

Environmental factors. Talking about environmental factors, UK is a signatory to Kyoto protocol according to which country is obliged to reduce carbon emissions which provide opportunities for the development of green energy. Although fossil fuel is still the dominant source for energy supply in the UK accounting for 86.2% of total consumption in 2013, this is an all-time low (Department of Energy and Climate Change, 2014). The trend remains in 2014 as well as the fossil fuel dependency is down to 83.1% in the second quarter of 2014 (Department of Energy and Climate Change, 2014). In a mean time renewable energy consumption is steadily increasing. Currently biomass still has the highest part of all the consumed energy sources; however solar panel consumption is continuing to gain popularity (Department of Energy and Climate Change, 2014).

In addition to environmental pressure to reduce the CO2 emission shifting towards renewable energy, chemical elements such as cadmium, arsenic, and silica dust used in production of the solar PV cells are considered to be potentially hazardous to people and the environment (Hernandez, et al., 2014). To avoid exposure and consequently damage to the environment, solar PV products have to be recycled during the decommissioning stage which requires additional resources for the manufacturers.

Legal factors. From legal point of view, UK PV industry is highly regulated. Both PV production companies and interested parties are obliged to get certain certificates if they intent to sell its production or acquire it. Such certificates include Energy Performance Certificate (EPC) that evaluates the effectiveness of solar panels and Microgeneration Certification Scheme (MCS) – quality assurance certificate for PV producers. EPC is required so that governmental institutions could promote more efficient use of space with the help of more effective solutions. The higher is the performance rating, higher is the rate of received feed-in tariff. MCS, on the other hand, is created so that both products and installers adhere to the highest quality and reliability standards in order to provide market with the best solution possible.

In addition to the policy change, regulation on Nearly-Zero Energy Buildings (NZEB) proposed by the European Parliament (EP) should further contribute to the shift from large-scale to smaller scale energy generation. According to the EP, NZEB is a building that has a very high energy performance index – low amount of energy is required (European Parliament, 2010). In addition to that, energy required for the building should be produced mainly from renewable source, most of which are on-site. According to the plans of the European Union, all new buildings should be NZEBs by 31 December, 2020 (Grözinger, Boermans, John, Wehringer, & Seehusen, 2014). Such directive is expected to drive the installation of small-scale solar PV systems up. According to Dr. Franz Karg, the effect

should be especially visible in the BIPV sector (Deign, 2014). Moreover, the development of BIPV sector is included among the top priorities for the United Kingdom Solar PV strategy until 2020 (Department of Energy and Climate Change, 2014), which may indicate a high future attractiveness of the particular segment.

Conclusion. The macro environmental analysis of the UK solar PV market revealed many important developments that shaped seemingly young industry. Among all other, the successful implementation of various incentive schemes could be considered as the main driver for the developments. Taking into consideration the changes in the policy, future expansion of the market may slow down as the large-scale segment is expected to diminish, however new market niches are expected to outweigh the loss. These niches, specifically Building Integrated Photovoltaics (BIPV), might be a good starting point for the SoliTek to capitalize on its current strengths and establish itself in the UK solar PV market.

Consumers and market segmentation. Photovoltaics industry is generally divided into 3 categories by their purpose: ground-mounted systems, commercial and rooftop applications, and residential applications. According to European Photovoltaic Industry Association (2014), ground-mounted applications serves only the purpose of producing energy for selling, whereas the other two are also used for internal consumption purposes. Therefore three customer segments can be identified:

1. Households which use solar power for personal purposes;
2. Businesses that use PV modules to power their facilities;
3. Investors that are involved in solar farming.

Figure 4 below illustrates the market segmentation of the current 5 GW industry.

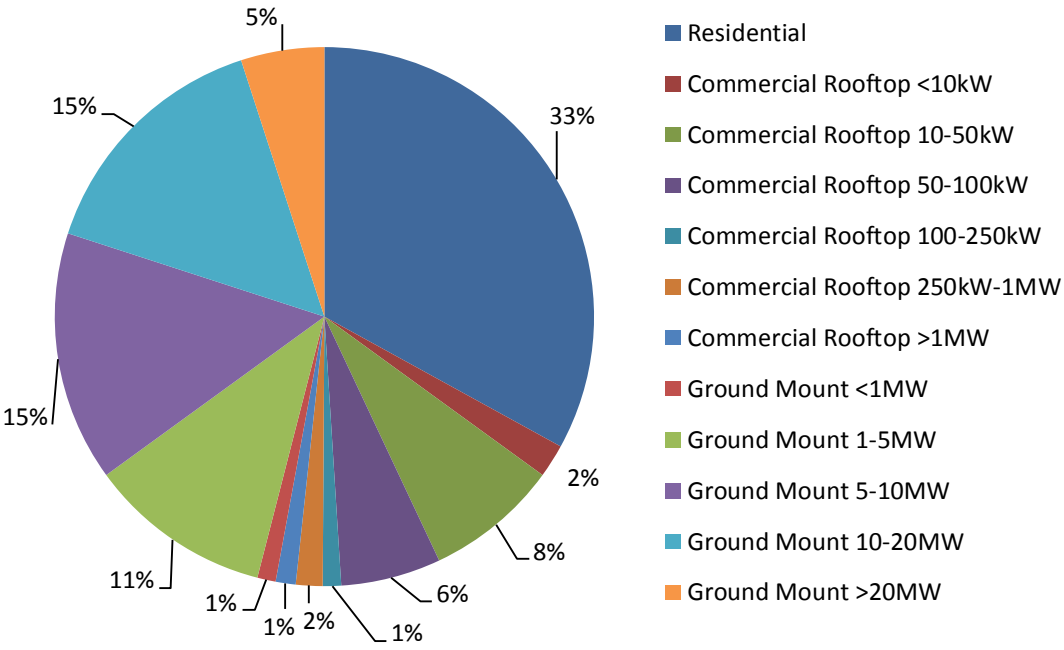

Figure 4. *Application segments in the United Kingdom PV market in 2013*

Source: *NPD Solarbuzz* (2014).

In 2013, one third of all installations were residential, 47% - ground mounted and remaining 20% - commercial rooftop installations. The distribution of the customer segments is likely to change in the graph of 2014 as nearly 2/3 of total of 2.2-2.3 GW of systems installed were ground mounted installations with capacities higher than 5MW (NPD Solarbuzz, 2014). It is also important to mention, that despite the intentions to promote large industrial rooftop installations, these systems contributed to roughly 2% from total capacity (NPD Solarbuzz, 2014). However, according to the direction of solar power generation incentive system, large-scale roof installations are expected to experience growth in the following years.

Customer segments are different in their nature – investors to solar farming seek financial gains while commercial and residential users install solar PV systems for internal usage as well as cost reduction. However, even though the usage patterns differ among consumer segments, major product attributes can be identified:

1. **Price** – final price the customer is paying for the product which is usually calculated on per Watt basis;
2. **Quality** – adherence to quality standards and product specifics required by the customer. This dimension also includes provided warranties and maintenance for the production;
3. **Brand image –** includes the reliability and perceived trustworthiness of the company;
4. **Efficiency** – share of solar radiation converted to the electric energy;
5. **Durability** – expected life span of the product.

Aesthetics can also be included in to the list of the most important attributes especially for residential customers as well as to commercial segment to some extent. Investors into solar farming tend to place little to no preference for the aesthetics of the solar PV installations in contrast to residential and commercial segments as the systems are usually ground-mounted instead of roof or building integrated. Focus on the aesthetic appearance of the product can be considered a positive trend for SoliTek due to its ability to use cells of various dimensions in their Glass/Glass type of module production.

Taking other dimensions into consideration, SoliTek has the required product attributes to satisfy the needs of the customers rather well. High efficiency, European quality and extended longevity are in-line or even above the industry norms. However, there are two main issues that put SoliTek in a difficult situation. Firstly, taking into consideration the similarity of the competing products available for the final customer, price of the product is among the most important factors for purchasing decision making. This is especially visible in the investor segment, however similar trend can be seen in other customer segments as well. Price sensitivity is a problem for many European producers as the price pressure from Asian manufacturers is high due to economies of scale provided by their high production volumes.

In addition to that, due to high importance of brand image for all customer segments, SoliTek is in an extremely difficult position. Corporate brand image is associated with nearly every aspect of production, product quality, and reliability of the company and has significant influence on creating trust and differentiation (Rindell & Strandvik, 2012). Despite the fact that market development started in 2010, biggest international players have already established a strong presence in the market and managed to create a recognizable brand images among each segment of the industry.

Competitor analysis. Even though the Solar PV market in the UK is considered to be young, it already has a fierce competitive environment. To have a comprehensive view on the market, it is useful to distinguish different competitor segments. Firstly, it is important to categorize companies according to the technology used for solar PV production. Currently there are several prevailing technologies which are discussed in the Table 2 below.

Table 2.

Competitive Environment. Solar PV Modules

	Mono Crystalline	Multi-Crystalline	Thin Film
Specifications	Efficiency: up to 22.5% Lifespan: 25 Price (Wp)[4]: 0.531€ Application: Residential, low-light conditions	Efficiency: 15-18% Lifespan: 20-25 Price (Wp): 0.481€ Application: Solar Farms, residential	Efficiency: 12-14% Lifespan: 20 Price (Wp): 0.534€ Application: BIPV
Major International players	1. Hanwha SolarOne 2. Canadian Solar 3. Q-Cells	1. Trina Solar 2. Yingli Green Energy 3. ReneSola	1. First Solar 2. Solar Frontier 3. Sharp
Local players	GB-Sol, Linuo Power.	Romag, GB-Sol.	Oxford PV, Kingspan, PolySolar.

Note. Developed by author.

[4] Source for the average module prices: Energy Trend (2014). Prices are converted to EUR.

Among the competing technologies crystalline and amorphous types can be distinguished. Crystalline technologies are a clear UK market leader with 85-90% market share whereas thin film accounted for remaining 10% of the market. Interestingly enough, even though the mono crystalline cells are recognized for having higher efficiencies and longer life span, multi crystalline (mc-Si) solar PV production is more popular in the market especially in large scale projects. This is mainly due to significantly lower price of modules and technological development that allowed mc-Si producers to reduce the gap in efficiency.

Thin film, on the other hand, is usually applied for Building Integrated Photovoltaics due to its flexibility, light and easily installable systems, a range of different colors, and ability to produce opaque or transparent solutions. Although the technology is relatively new compared to crystalline type, this option fails to gain wide popularity and is still considered a niche product. However, as the technology is being constantly developed by such international players as First Solar or Solar Frontier, the major drawback – low efficiency of the thin film modules – may soon be solved allowing for thin film to compete with currently leading technology. In fact, thin film technological leader First Solar is already capable of producing modules with 19.1% of efficiency and is planning to increase the number to 23% in the near future. Such efficiency figures combined with the fundamentally cheaper production costs and wide applicability may result in a paradigm shift in the industry.

Significant growth rates in the UK solar PV market did not remained unnoticed by the major players in the global solar PV market. Consequently, the market is currently dominated by the world class companies within every segment of the industry. The competitive environment became even more difficult after a trade agreement in 2012 between European Union (EU) and China under which EU exempted Chinese silicon based solar PV exporters from EU import duties but imposed minimum price and trade quotas to protect local producers from price dumping. Under current terms, the agreed floor price is 0.51 €/W and

quota size is 7 GW annually (Colville, 2014). However, considering the increased interest for solar farming and the difference in price levels, it is not surprising that among top 10 suppliers of solar PV modules to the UK, 7 of the companies are Chinese (NPD Solarbuzz, 2014).

While analyzing the biggest players of the market it is important to distinguish the top three – Trina Solar, Yingli Green Energy (YGE) and ReneSola. These companies currently have the biggest influence in the UK market as well as in the international arena. All three companies are well vertically-integrated providing both components for production as well as the final crystalline type products to the market. It is difficult to consider these companies as direct competitors for SoliTek due to their operating capacities and well-established brand names. To illustrate the difference between these companies and SoliTek, it is interesting to look at the factual numbers of Yingli Green Energy. YGE is currently the biggest solar PV supplier in the world accounting for nearly 10% of global solar PV market, employing more than 19000 people, and having branches in more than 30 countries. The operating capacity of YGE in 2013 was nearly 3250 MW for PV modules whereas SoliTek is aiming for a moderate 50 MW of total operating capacity for their PV modules. Similar figures can be also found while analyzing other major market players. Therefore, even though SoliTek has an innovative product, it is not yet capable of competing with these international companies.

Among the major competitors SoliTek identifies UK's Romag and GB-Sol – local producers with similar production volumes.

Table 3.

Competitive Environment. Major competitors

	Product type	Efficiency	Longevity	Warranty	Features
SoliTek	Multi crystalline	Multi – 18.5%	30-40 years	20 years	• PERC • PID-Free • PIB rim

GB-Sol	Mono/multi crystalline	Mono – 14.6% Multi – 13.7%	25 years	5 years	• ISO, TUV and MCS certified • Customized modules available
Romag	Mono/multi crystalline	Up to 15.9%	25 years	10 years	• MCS certified

Note. Developed by author.

Both companies can offer similar BIPV solutions and specialize in production of both mono crystalline and multi crystalline cells and modules. In addition to that, they are MCS certified which shows that a supplier adheres to the required quality standards which appeals to the customers. Although all three companies claim to have similar attitudes to customer care, the differences among the competitors are clearly visible, especially in technical features of their products. Starting from efficiency of the solar cells where even the decimal points can make a difference, GB-Sol's 14.6% and Romag's 15.9% falls short to 18.5% that SoliTek currently offers and is expected to increase this number in the near future. In addition to that, lifespan of both Romag and GB-Sol products is around 25 year, while SoliTek PV modules have longevity of more than 30 years due to their unique PIB rim technology. This allows SoliTek to offer much longer warranties (20 years) which may appeal to the customers. Yet both of the competitors are well-established in UK market while SoliTek brand is unknown. Company has to focus on increasing brand awareness in order to compete with local players.

Conclusion. External analysis of the UK solar PV market revealed that the governing bodies of the UK are dedicated to promote low-carbon energy generation participation in the overall energy market. A number of incentive schemes were introduced due to this purpose that had a strong effect on the development of the market. However, the anticipated changes in the incentive policy are expected to change the solar PV industry towards smaller-scale

solar PV projects which could be considered a favorable market development for SoliTek. Considering the competitive environment, even though the market is relatively young, biggest international players already have a big influence. For a new player, such as SoliTek, finding a niche market is essential in order to avoid competing with strongest international companies yet establishing themselves in the market with high future potential.

Literature Review

The purpose of literature review in this paper is to understand the methods used in developing a market entry strategy and select an appropriate framework for the development of market entry strategy for SoliTek.

As might be expected, there are different views on what the strategy is. According to Hamermesh (1983, p. 1) the first studies on strategy in 1964, defined the concept as "the pattern of objectives, purposes, or goals and major policies and plans for achieving those goals, stated in such a way as to define what business the company is in or is to be in and the kind of company it is or is to be". As might have been expected, early definitions of strategy were complex and created around a company. Along the years definition of a strategy slowly shifted from the company level to product level emphasizing the need for creating and sustaining competitive advantage against the rivals. According to Hanson, Dowling, Hitt, Ireland, & Hoskisson (2002, p. 124), strategy is an "integrated and coordinated set of commitments and actions designed to exploit core competences and gain competitive advantage"; whereas Dess, Lumpkin, Eisner, McNamara, & Kim (2012, p. 48) described strategy as "analyses, decisions and actions an organization undertakes in order to create and sustain competitive advantages". It is clear that definition has changed during the years yet the essence remained the same. Companies require strategy to achieve and sustain competitive advantage to earn above average returns. It also has to be noted that strategy has to be systematic and involve both internal and external environments of the company.

Yet the most important aspect of the strategy is that it has to be distinctive. Porter (1996, p. 64) put it simple: "The essence of strategy is in the activities – choosing to perform activities differently or to perform different activities than rivals". Thompson, Strickland III, & Gamble (2005, pp. 6-7) add to this claim and suggest: "giving buyers reason to prefer its products or services and produce a sustainable competitive advantage over rivals". Taking this information into consideration, the definition of a strategy that is used in this paper and is applied for developing managerial solutions is that a good strategy is such that combines the differentiated set of activities that a company performs in order to achieve competitive advantage and earn above-average returns.

However, a good formulation of the strategy is only the first step. Strategy can be considered good only if it is formulated properly and can be implemented according to plan. Due to this reason it is important to combine the internal capabilities, strengths and weaknesses as well as properly evaluate the external environment that the company operates in. Thompson and Strickland III (1992) identified three main aspects that make strategy a winner:

1. The goodness of fit test – well matched with internal and external situation;
2. The competitive advantage test – leads to sustainable competitive advantage;
3. The performance test – boosts company's performance (financial and competitive position).

Moreover, it is of high importance to choose the correct approach to strategy. As Reeves, Love & Tillmanns (2012) discussed, there are four approaches to strategy according to the predictability (how confident future predictions can be made) and malleability (extent to which market factors can be influenced by the market players) of the market.

Table 4.

Approaches to Strategy

	Predictability (High – Low)	
Malleability (High – Low)	**Classical**	**Adaptive**
	Predictability: High Malleability: Low	Predictability: Low Malleability: Low
	As the goal to take a favorable market position is set, company employs its resources and capabilities to attain it. Taking into consideration that the market is highly predictable, quantitative methods are used to plan the future developments of the market. The initial plan tends to remain unchanged for several years as the favorable position in the market rarely changes.	As the market is highly uncertain, rapid decision making is of the highest importance. Periodical or continuous review of goals, tactics, and practices are essential in order to sustain the competitive advantage that a company has or is trying to achieve. It is also important to have operations that minimize the loss of information and time lags.
	Visionary	**Shaping**
	Predictability: High Malleability: High	Predictability: Low Malleability: High
	Due to the ability to predict the development of the market and shape it, thorough planning process is important. Having a clear goal in mind, required resources should be planned accordingly. Finally, a strict adherence to the plan and a strong commitment are essential to this approach.	Mostly used in new markets with high growth and innovation rates, markets with no significantly stronger players, or stagnated markets where a disruptive change can cause a change in the development of the industry. The best course of action is a combination of short term planning and experiments that would provide the opportunity for a disruptive technological change.

Source. Reeves, Love & Tillmanns (2012).

Note. Adapted by author.

Taking the reviewed literature into consideration, strategy is the basis for the decisions made in the company. It is very important to develop such strategy that would take advantage of the strengths of the company as well as the favorable market developments. To attain such goals, formulation, choice of an approach, and the implementation of strategy are equally important parts in the pursuit for competitive advantage.

Market entry framework. Good company - level strategy is of the highest importance to the overall operation of the enterprise. However, when a company is trying to

enter new market, sound market entry strategy is essential. Root (1998, as cited in Clausson and Johansson, 2011, p. 2) describes an entry strategy as "a comprehensive plan that sets objectives, goals, resources, and policies that will guide a company's international business operations over a future period". An important consideration is that the company - level strategy and the market entry strategy are interdependable ensuring the optimized use of resources, enabling policies, and provision of common goals and objectives.

Root (1998, as cited in Clausson and Johansson, 2011, p. 2) has also indicated that entry strategy should include the following aspects:

1. The selection of a target product/market;
2. Objectives and goals in the particular market;
3. The choice of entry mode to penetrate the country;
4. Marketing plan to penetrate the target market;
5. Control system to monitor performance in the target market.

After having identified the target market and a product portfolio fitting market specifics, set the goals and objectives that a company is aiming for in a particular market, selecting an entry mode is a crucial step in developing an entry strategy. Root (1998, as cited in Clausson and Johansson, 2011, p. 18) broadly described entry mode as "an arrangement that enables company's resources – products, technologies, human resources, management and other resources - into a foreign market". Three major categories of market entry modes are distinguished – export, contractual entry, and Foreign Direct Investment (FDI). Table 5 below provides a summary of major characteristics of the aforementioned categories.

Table 5.

Market Entry Modes

Entry mode	Characteristics	Advantages	Disadvantages
Export	1. *Direct export* is a form of internationalization where company works with and develops a relationship with foreign customers, suppliers, or markets while maintaining production in the home country (Czinkota, Ronkainen, & Moffett, 2004). 2. *Indirect export* is a form of market entry where company is not directly involved with the customers or firms in the foreign market but works through an intermediary instead (Czinkota, Ronkainen, & Moffett, 2004).	1. Lowest costs in comparison to other internationalization modes – company can understand the market and decide on further expansion without heavy investment. 2. Simple control mechanisms required to keep the level of quality and ensure the communication with foreign affiliates.	1. Lower the involvement in the foreign market, less likely a company can develop required knowledge and experience of doing business abroad. This limits the prospects for further expansion (Czinkota, Ronkainen, & Moffett, 2004). 2. Physical distance to the market has an impact on the final price of the product due to transportation costs. In addition to that, physical distance also results in longer lead time.
Contractual market entry	1. *Licensing* is a method of market entry when one company allows another to produce, package, or use intellectual rights of its products in exchange for compensation (Czinkota, Ronkainen, & Moffett, 2004). 2. *Franchising* is a form of licensing which allows distributor or retailer to have exclusive rights to sell company's products in a specific area (Czinkota, Ronkainen, & Moffett, 2004).	1. Requires no capital investment or involvement with foreign customers at the same time allowing to test the market (Czinkota, Ronkainen, & Moffett, 2004). 2. Foreign risk is reduces as the licensee is a local company (higher market knowledge, lower probability of government interference).	1. Little control over licensee – difficult to track sales and collect payment. 2. There is a threat that licensee will develop its own competitive product not only for local, but also for international markets. 3. High degree of standardization required to provide instant identification in the foreign market (Czinkota, Ronkainen, & Moffett, 2004). 4. Product has to be unique or have a unique selling proposition. In addition to that, brand name has to be recognizable in an international market.

Strategic alliances	A form of collaboration among firms with complementary strengths to achieve common business objectives (Czinkota, Ronkainen, & Moffett, 2004). It is useful to distinguish pooling (driven by similarity and integration) and trading (driven by possession of different resources) alliances.	1. Sharing knowledge and know-how may enable economies of scope and push the production frontier outwards. It may also improve the foreign market knowledge and provide for a better market entry and marketing strategy development. 2. Such entry mode allows for a quick access to new products, technologies, and markets; share costs, resources, and risks (Ball, McCulloch, Jr, Frantz, Geringer, & Minor, 2006).	1. Clear understanding of commitments is essential in order to facilitate a successful cooperation. 2. Many alliances fail due to difference in strategies, operating practices, and organizational cultures (Ball, McCulloch, Jr, Frantz, Geringer, & Minor, 2006)
Foreign direct investment (FDI)	Foreign direct investment refers to investments into equipment, structures, and organizations in foreign markets at a sufficient level to obtain significant management control (Ball, McCulloch, Jr, Frantz, Geringer, & Minor, 2006). Several types of FDI is identified: 1. *Wholly owned subsidiary* – a business entity that is completely owned by a parent company. 2. *Joint-venture* – a cooperative between organizations that share common interests in a business enterprise or undertaking (Ball, McCulloch, Jr, Frantz, Geringer, & Minor, 2006)	1. Reduction of physical distance – "bringing products closer to the customers". It also helps to reduce cultural distance and tackle country-of-origin effect if there is any. 2. May provide cost reduction (lower labor costs, tariff duties, governmental subsidies) or easier access to resources (e.g. qualified labor force). 3. Vertical integration of companies may provide stronger competitive position due to control over different parts in the supply chain.	1. Lack of control due to legal systems in foreign countries in case of joint venture – host country legislation may restrict foreign nationals to own majority of shares in the company. Due to this fact foreign country partners may pursue their own strategy instead of common goals. 2. High costs for establishment and high degree of risk associated with most forms of FDI. 3. Tradeoff between production costs and quality – outsourcing production to countries with cheaper labor force may reduce the quality of the production.

3. *Contract manufacturing* – an agreement between companies that a local firm produce products or parts according to the specifications provided by the company. 4. *Management contract* – an agreement that one company provides management in all or certain areas of another company (Ball, McCulloch, Jr, Frantz, Geringer, & Minor, 2006). 5. *Mergers & Acquisitions (M&A)* – the consolidation of two companies to form a new business entity.

Note. Developed by author.

According to Uppsala model, company should take internalization process as a continuous process and increase the level of internalization after gaining substantial experience in the market and developing their dynamic capabilities (Vahlne & Johanson, 2013). After becoming familiar with the market, company can choose to increase the level of involvement and commitment which lowers the distance between markets – both physical and cultural yet at the same time bears risks and requires investment.

Selection of an entry mode. Although a variety of market entry modes are available, current position for SoliTek is to go with direct export as an initial entry mode. Darling and Seristö (2004) discussed the specifics of such entry mode emphasizing that the development of an export strategy is a nine step process[5]. As can be seen from the Table 6 below, strategic steps for exporting include and elaborate on the entry strategy steps discussed by Root. Darling and Seristö (2004), however, divided the process into smaller pieces both as a

[5] Theoretical model for market entry provided in the Appendix B.

prevention mechanism in order not to overlook the important strategic considerations, and as a mean to ensure easier evaluation and control required to continuously improve the process.

Table 6.

Steps for Export Strategy

Step	**Explanation**
Analyze market opportunity	Collection of market data to identify suitable markets and evaluate their potential. This data typically includes: • Present and future market trends; • Market size, segmentation, and sales potential; • Governmental restrictions and regulations; • Competitive environment and the price level; • Importance of supply chain and distribution channels; • Product attributes required by the market. It is also important for a company to analyze the entry strategies of their competitors that entered the market earlier. This could prevent company from repeating the same mistakes and use the good practice of others similar incumbents.
Assess product potential	The main goal is to evaluate the unique selling proposition (USP) to differentiate products in the market. To assess the product potential correctly, company has to compare the products with ones already present in the market to evaluate its competitive position. Emphasis should also be put on purchasing patterns of the local customers, required quality standards and price considerations, potential response from other market players, adaptation of the product to the foreign market. When bringing innovative products to the market, company has to take into consideration the hardship of challenging status quo, which should reflect in evaluation of the market potential and actions to mitigate the risk (Chakravorti, 2004).

Establish market entry mode	Company has to face a trade-off between level of internationalization, desired level of control and investments required. Two major categories of foreign entry exist – maintaining domestic production plant or relocating resources and operations to foreign country. Major considerations in choosing market entry mode include:
	• Availability of the entry modes;
	• Cultural issues;
	• Governmental regulation;
	• Problems associated with geographical distance;
	  ○ Logistics;
	  ○ Communication;
	  ○ Control mechanisms.

Allocate necessary resources	Resources include human capital and funding, planning and preparing for the fluctuating demand. It is often the case that companies tend to overrate their resources and capabilities while assuming that market is bigger or more potential than it actually is or that rivals will not react to their entry (Horn, Lovallo, & Viguerie, 2005). To avoid these issues resource planning should be realistic with certain level of reserves allocated especially in the early stage of international activities.
Identify technical issues	It is important to distinguish the procedures required for operations in a foreign country. This part usually includes the taxation and tariff duties, legal frameworks imposed by the foreign government, identification of the method of payment and delivery terms, documents and certificates required by the customers and/or suppliers, and legal procedures in case of disputes.
Develop strategic marketing plan	Unites all the previous analyses and considerations into one plan of action. Includes the motives behind market entry, target segments, marketing strategies, current and expected actions of the competitors. According to the authors, the selection of the criteria to be included in the strategic marketing plan relies on the individual cases of the company depending on the set priorities for the market entry.
Organize operational team	As foreign operations differ from domestic, unique set of skills are required. For the start of the export strategy, experienced sales team increases the chances of a success. Clear definition of roles and responsibilities along with the detailed business process descriptions may allow to make the sales process more efficient.
Implement market entry strategy	Although crucial to the success of the international activities, can only be achieved after a careful preparation done in previous stages of the process.
Evaluate and control operations	As the market is not a static environment, evaluation of the process and appropriate control mechanisms are essential to ensure continuity of the progress, learn from mistakes and improve operations.

Source. Darling & Seristö (2004).

Note. Adapted by author.

According to Thompson, Strickland III, & Gamble (2005) using domestic production plant as a production base for exporting goods to foreign market is an excellent initial strategy for pursuing international sales. It is a good way to test the market before expand the scope of internalization. In addition to that, such market entry mode bears minimal risk for the producer since major operations are still performed in the home factory. Such entry mode could be associated with cross-cultural risks trying to sell products abroad. However, sales department in SoliTek has already been involved with international sales and is aware of UK

market specifics. If cross-cultural differences would pose a threat, outside consultants or sales agents could provide the solution, yet that would lead to lost control over operations to some extent.

Thompson, Strickland III, & Gamble (2005), however, argue whether an export strategy can be considered sustainable over the long term depends on the relative cost-competitiveness of the home country production base. Export strategy is vulnerable when:

a. Manufacturing costs in the home country is substantially higher that in foreign countries where rivals have plants;
b. Cost of transportation is high;
c. Adverse shift occurs in currency exchange rates.

To sum up, direct export is a good starting point for international activities, yet it is important to take into consideration that long-term sustainability of this internalization mode is debatable.

Approach to market entry strategy. Having set the mode of the market entry, final step of the strategy formulation remains the approach for entering the market. The most acknowledged framework while entering the new export market remains Porter's (1980, as cited in Dess and Davis, 1984) three generic strategies – low cost, focus and differentiation. According to Porter companies can earn above average returns if only one of the three generic strategies are being pursued. Otherwise companies risk of getting "stuck in the middle".

Since Porter's article there were many discussions surrounding this topic that are relevant to current SoliTek situation. Recent study of Greece companies revealed that combination of two generic strategies tends to yield higher returns than one purely generic strategy (Salavou & Halikias, 2009). Authors have also suggested companies to focus more on marketing (e.g. brand identification, distribution channels) rather than on low cost

elements or niche differentiation (e.g. operational efficiency, new product development). Porter (1996) adds to this claim that although important, operational effectiveness is not sufficient. Even though company can outperform competitors on a price basis, it must also deliver greater value than its competitors to achieve and sustain competitive advantage. This, according to Porter (1996), can only be done through differentiation of activities, as manufacturing process can be copied by the competitors.

To sum up the impact of a good market entry strategy, Horn, Lovallo & S. Patrick Viguerie (2005) have stated that for every successful market entry there are about four unsuccessful. Taking this information into consideration careful planning, implementation of the plan and evaluation of performance are of highest importance.

Conclusion

Situational analysis provided the overview on the competitive position of SoliTek in an international context, allowed understand the most significant market factors, distinguished the difference in the customer segments, and identified a suitable theoretical framework for development of a market entry strategy. Analysis revealed that the UK market is attractive due to its grow and future potential, however also drawn the attention to the intense competitive environment. Although superior to the local competitors of similar operational capacity, SoliTek is not yet capable of competing with the large and well-established international players in the mass market. Therefore, according to the findings of the secondary research, residential and Building Integrated Photovoltaics segments can be considered as suitable segments for SoliTek to enter due to their potential and less competition. Finally, literature review analyzed the steps for market entry strategy development. Direct export was identified to be the most suitable entry mode for SoliTek due to lowest risk and financial resources needed. Such entry mode is expected to allow the company to test the international market before increasing the international involvement. The

following parts of this paper applied the information collected during the situational analysis to carry out the empirical research and propose managerial solutions for developing a market entry strategy for SoliTek to enter the UK's photovoltaics market.

Empirical Research

Having in mind that good strategy is such that matches internal capabilities, strengths and weaknesses of the company with external environment that a company operates in or is trying to enter (Thompson, Strickland III, & Gamble, 2005), empirical research was carried out to uncover crucial factors of UK's photovoltaics market that might have been missed using only secondary sources. Thus, the aim of this research is to identify the most prominent UK's solar PV market specifics and success factors for developing a market entry strategy. To achieve this aim, following objectives are to be achieved:

1. To choose the suitable research method and data collection method;
2. To identify the criteria for respondent selection;
3. To design a questionnaire based on the theoretical framework;
4. To conduct an empirical research;
5. To discuss the results of the research and provide conclusions.

Research methodology

Qualitative semi-structured interviews with UK's PV market experts and stakeholders we chosen. Even though quantitative research is more common in international business (Doz, 2011), qualitative research method was chosen due to several reasons:

1. Quantitative research often tries to describe or explain linkages between several variables, yet the goal of this empirical research is to understand the market specifics and identify the major trends in the market as well as the success factors. Javalgi, Granot, & Alejandro (2011) argued that a quantitative research is useful when researcher is trying to show magnitude of a specific

problem, whereas qualitative research helps to identify the underlying causes and understand the process itself. In the development of a good strategy for market entry, latter option is more valuable.

2. Quantitative research is rather rigid and might lead to overlooking important aspects or paradoxes that only an expert of the industry could reveal. The higher the elasticity of the concept, less likely it can be put in a standardized numeric form that can be analyzed by quantitative methods (Saunders, Lewis, & Thornhill, 2009). According to Yves Doz (2011), only rich "thick" descriptions can prevent researcher from "seeing what he or she was already believing". Taking into consideration the nature strategic development, missing important details might lead to failure, thus qualitative research is expected to minimize such risk.

Qualitative research, however, has certain limitations:

1. The responses gathered from the participants are rather subjective, based mostly on personal opinion.
2. As discussed by Yves Doz (2011), results have to have a deep methodological grounding, making the interpretation of the results more challenging.
3. Researcher has to be careful not to ask ambiguous, biased or leading questions to obtain credible information.

Data collection method

Telephone interviews were chosen to facilitate the information gathering process. Despite the fact that telephone interviews are considerably cheaper and less time consuming, some limitations can also be attributed to telephone as a medium for interviewing. Although some researchers claim that quality of data acquired by phone and face-to-face are comparable (Block & Erskine, 2012), inability to evaluate non-verbal communication may

result in loss of valuable data. In addition to that, telephone interviews tend to have a higher refusal rate and it is more challenging to create trust and build a rapport (Trier-Bieniek, 2012). However, research also shows that anonymity of the respondents enables them to share the information that they might not have shared face-to-face (Block & Erskine, 2012).

Sample size and selection criteria of respondents

According to Morrow (2005), size of the sample for qualitative research to be representative should be between 20 and 30 respondents. However, author also suggests that due to various constrains samples of 12 respondents could be considered as adequate.

Having in mind that broad understanding can only be achieved by combining different points of view on the industry, several stakeholders groups were interviewed due to different stakes in the UK's photovoltaics industry. These stakeholders include:

1. Representatives from governing bodies responsible for solar power industry;
2. Local and international producers for solar PV cells and modules – industry players know the market specifics and understand the success criteria. Selected companies vary in size, offer products of different characteristics and are based in different countries;
3. Producers of supplementary products for solar PV systems – inverter, battery, and mounting system producers;
4. Experts involved in implementation of solar projects in UK.

During this research 62 representatives were contacted through e-mails or phone calls, yet only 10 of them agreed to participate in the research. Eight interviews were conducted by telephone while two respondents answered the questions by e-mail. After the assessment of the data gathered, 1 interview was removed from the data analysis due to subject's limited experience in the UK's solar PV market. However, despite the low response rate the theoretical saturation point was reached as the respondents identified similar factors and

market trends.

Research instrument

Although semi-structured interviews put interviewee in a leading role, there were several preset topics that were of particular interest. Table 7 provides the list of topics as well as the questions that the respondents were asked in order to find the underlying factors for the important market developments and the decisions made[6].

Table 7.

Topic-Question matrix

Aim	**Question**
To identify the drivers of the development and analyze the changing environment	*1. What could be the reasons behind the recent market growth?* *2. Would You please share You insights on what has changed during Your years of operation in the market?* *3. Have You faced any problems with the UK's solar PV market? Please describe them, if there are any.*
To compare the reasons behind technological choice, and find the areas that need the most attention when bringing a product to the market	*1. Why did You choose the particular technology?*
To evaluate the level of competition and the major concerns of the market players towards the competitive strategies	*1. How would You evaluate UK solar PV market's competitive environment?* *2. How do European producers compete with Chinese suppliers?*
To identify the needs of different customer segments and evaluate the steps the companies are taking to satisfy them	*1. What are the major customer segments in the market? How different are they?* *2. What are the major product benefits that the UK customers are seeking?* *3. What are the major selection criteria for a purchase decision making?*

[6] Complete questionnaire is provided in the Appendix C.

To evaluate the significance of the country of origin to the sales of the products	*1. Is there a significant Country-of-origin effect in choosing a supplier or a product?* *2. How important for a foreign company is to have a local sales office or a local distributor?*
To identify the expectations of the market players, to distinguish the segments of the industry with the highest potential, to evaluate the effect of the anticipated changes in the market after the incentive policy change	*1. What effect do You think the incentive policy change will have on the market?* *2. What technological changes can be anticipated until 2020?* *3. Which industry segments are expected to grow the most until 2020?*

Note. Developed by author.

Taking into consideration that many stakeholders were interviewed, questions were formulated in a different manner according to the field of activities of the respondents. Major differences can be seen between the questions for the governing bodies and the producers with regard to the incentive policy. Local official were asked "why" was the policy changed while companies were asked to describe the effect that the change had or will have on the market.

In addition to that, some minor differences can be seen in the questions between local and foreign or international companies. Questions for the international business representatives involved the opinion on the importance of the local sales office and country-of-origin effect, while local players were asked to focus more on the market development and the specifics.

Data analysis method

According to Taylor-Powell & Renner (2003), there is no single or best way to analyze qualitative research thus the choice for research methods depend on:

1. Questions to be answered;
2. Needs of the ones that the research is prepared for;

3. Availability of resources.

Taking into consideration that the main goals of the research are to identify the most prevailing trends in the market and to identify the crucial success factors for market entry, content analysis was chosen as the method for data analysis. The analysis includes the assigning the data to the combination of both preset and emergent categories to identify the patterns and themes as well as to provide the information in a coherent structure (Taylor-Powell & Renner, 2003).

Results

The analysis of the collected data revealed several dominant trends:

1. The growth of the industry can be mostly attributed to the incentive schemes.
2. Multi crystalline solar PV modules are favored to mono-crystalline solar PV modules especially in ground mounted applications.
3. Hostile competitive environment due to strong involvement of big international players.
4. Most important product attributes:
    a. Price;
    b. Quality;
    c. Brand Image in an international context;
    d. Provided warranties.
5. It is difficult to do business in the UK without a local sales office or a sales representative.
6. Unclear future of the market due to anticipated policy change to promote small-scale low-carbon energy generation.

Market Development. Starting from the factors behind recent market growth all the respondents identified the introduction of the incentive systems (namely Renewable

Obligation (RO) and Feed-In Tariff Scheme (FITS)) to be the major driver of the recent market developments. Some respondents claimed that there are direct linkages between the changes in the incentive systems and the interest in the solar PV projects as there has been a noticeable rush before the periodical reduction of feed-in tariffs that is aimed to stabilize the market. Interestingly, though, that most of the respondents which identified the importance of the incentive schemes to the overall growth of the market are primarily dealing with large projects under ROC program which are expected to be changed from 2015. The policy change already seem to have an effect on the market as numerous participants expressed the concerns regarding the decreasing interest in the utility-scale solar farms from investors which results in the decreasing demand.

Some respondents, on the other hand, considered the incentive scheme to be only the initial push for the industry especially in the residential segment of the market. These respondents claimed that currently the industry is purely driven by the rising cost of centrally provided electricity and the independence provided by the solar PV solutions against the frequent energy cuts. The interest in the solar energy, according to them, is expected to grow due to the fact that grid conditions are not likely to be improved in the near future.

In addition to that, smaller companies dealing with domestic households are positive regarding the change of the incentive policy to shift towards small-scale energy generation. According to them, previous system was good, but also had certain negative aspects. It increased the interest in solar energy yet primarily due to guaranteed returns provided by the incentive schemes. Representatives from British Photovoltaics Association added to this claim that the government is keen on promoting the usage of low-carbon energy, not provide profits for the investors. Moreover, such change is expected to have a longer lasting effect due to the fact that residential customers tend to choose products of higher quality and longer life span.

Technological factors. Considering the choice of the technology for the PV cells several trends were prevalent. Firstly, the choice of technology is attributed primarily to the targeted market segment. According to Arvydas Kazlauskas, director of AKV Energy, multi crystalline technology is mostly used in the solar farms due its price, whereas mono crystalline is more suitable for residential applications on the roof. Big international companies therefore have a well-developed product portfolio and are able to offer solutions for different customer segments. However the diversification seems to be limited to the major technological choice between crystalline and other types of PV products. Matthias Goldbach from Hanwha Q-Cells claimed that a company previously had a subsidiary producing thin film products, but it was sold in 2012 to focus on crystalline technology which is currently the benchmark of the industry.

Smaller companies, such as Oxford PV and PolySolar, believe that as their target market is Building Integrated Photovoltaics the only choice for production is thin film technology due to its wide application in the segment and the product specifications. It is important to mention that close engagement with the architects during the product development stage is among the priorities of the smaller market players. In fact, according to the representatives of Oxford PV, early conversations with architects allow for a better product offer capitalizing on such weaknesses of their major rival – crystalline technology – as physical appearance or difficulties to install a product. They base their choice for the thin film technology on the fact that even though the crystalline glass-glass type modules are currently dominating in the BIPV segment, the technology cannot be heavily used for the vision part of the façade, whereas the ability to provide opaque or transparent thin film products might be the solution the architects are looking for.

Competitive environment. All the respondents were asked to evaluate the competitive environment in the UK's solar PV industry. Most of the participants responded

that the market is very competitive, however different trends were seen. According to the respondents, competition in the crystalline type modules is by far the most difficult due to the strong participation of Chinese companies and their low-priced production. Companies expressed their concerns that Chinese manufacturers are capable of supplying products with very similar specifications yet for a significantly lower price. In addition to that, even though the quality of the Chinese production is slightly lower, it is nearly impossible for a customer to distinguish significant differences between the products and thus the cheaper option is often chosen. Taking this information into account, two conclusions can be made. Firstly, there is a significant pressure on the prices of the production. To tackle this issue Hanwha Corporation is planning to merge two of its companies – Q-Cells and SolarOne – to use the economies of scale for reducing the costs. According to them, it is the only way to compete with the Chinese producers. Secondly, companies are trying to provide innovative solutions and apply new technologies hoping to differentiate their production and create at least some competitive advantage. Q-Cells' Q.Antum technology to boost the performance of their products could be considered as an example of this trend.

Getting back to the competitive environment, according to Kai Schuebel – director of K2 Solar Mounting Solutions, European companies are also entering the UK market due to impressive growth trends. His main concern, however, was that despite the recent grow the market is not yet big enough to cope with the increased interest from the supply side. This might be considered as a positive development from customers' perspective, unfortunately, from a business perspective it is becoming even more challenging to offer differentiated or unique products to the market which already has both low-cost and high-quality suppliers.

On the other hand, slightly different situation can be observed in other segments of the market. Suppliers of inverters, batteries and mounting systems agreed that Chinese producers are a threat in a residential segment, yet European companies are still preferred in

the utility-scale projects due to the better quality of their production and the reliability of the companies. Similar trend also applies for the BIPV sector as Chinese companies primarily compete in the large scale projects while their presence is rather low in BIPV. However, according to the representative from PolySolar, there is little competition from the Chinese in the BIPV "yet". Current market players understand well that, taking into consideration the recent policy change, Chinese manufacturers are expected to eventually consider entering BIPV market. Fast decision making is now among the major concerns for the European suppliers in order to find either credible partners or niches before any further actions of the Chinese producers.

Customers. Different views were expressed by the respondents regarding the most important product features which allowed getting a comprehensive view on the customers in the PV market. The majority of respondents identified that customers in general are very price sensitive, even though the claim to value the quality of a product. In fact, some respondents identified price sensitivity in the market without being asked directly while hardly anyone talked about the quality of the product. It appears, however, that quality is more important for choosing systems components – inverters, batteries, and mounting solutions – rather than modules. In addition to price and quality, participants identified brand name, provided warranties, and product characteristics to be among the most important aspects for product choice.

To understand the differences in the market, it is useful to distinguish the needs of different customer groups. Starting from the residential segment of the market, physical appearance, power and efficiency were said to be the most important characteristics. However, due to similarity of the products in the market choice of this segment is highly influenced by the price of the production. Surprising insight is that none of the respondents identified quality to be among the major customer benefits in residential sector. It can be

assumed that residential customers tend to look less for return on investment in a long run and are rather short-term focused driven by cost savings on energy consumption and independence from national grid.

The situation in the utility segment is slightly different. Due to the large project scale this segment tends to focus on the quality of the product as well as the reliability of the supplier. The latter one is very important due to combined tenders with banks that seek security for their investments. In a market where product specifications differ only slightly, longer warranties serve as an indicator for better quality In addition to that a well-established brand name allows the company to improve their possibilities for winning a tender. Moreover, the importance a brand name was stressed by the Hanwha Q-Cells which, despite the fact of becoming the largest PV module supplier in the world, puts continuous efforts in establishing their brand and increasing the awareness.

Many participants also identify ease of installation as being a significant factor for choosing the product. This is especially important for the installers and the architects – segments which have a significant influence on the market. The case is especially visible in the BIPV segment where easier solution for installation of crystalline modules might strengthen their current position and reduce the need to shift to alternative solutions such as thin film technology.

Interesting findings can be seen on the country-of-origin effect. Respondents that were asked to share their opinion on the issue answered that there is either none effect or the effect is insignificant. Kai Schuebel – director of a German mounting solutions production company with a subsidiary in the UK – explained that customers "like" the local products, but this does not have an effect on their product choice. However, the reality might be that the country-of-origin effect is present in the market, yet is less important than the brand name of the company. In addition to that, some companies might not feel the effect as they are from

well-developed solar markets as Germany or Spain, whereas one respondent mentioned that it is very challenging to do business in the UK as a foreigner mainly due to different culture and legal frameworks.

Local presence. The interviews revealed the importance of a local presence for a foreign company operating in the UK. All four foreign producers that were asked to share their view on the necessity to have a local sales office or a distributor in the UK identified that is it very important. According to Kai Schuebel, unless the company can offer the cheapest products, it cannot be very successful without a local sales office or a representative. Other respondents added that being locally present is essential due to the fact that customers require support for the products. It is important to draw the attention to the word "require" as it appears that customer support is considered to be the necessary instead of additional services provided. Moreover, local presence allows for a better market understanding and ability to provide products instantly which is considered to be the key to success.

Even though local office was a preferred mean for local presence, multiple respondents identified the benefits of working with big installers which do not only have their own projects, but also work as distributors. This is a cheaper yet still effective alternative for initial market entry, however to strengthen the competitive position possibility of a local office should be taken into consideration.

Expectations for the future. Last questions of the interview asked the respondents to provide their view on the future market development. Most respondents considered the change in the incentive policy system to have the most influence on the further development of the market. The majority of respondents believed that the market growth will remain, however the expectations were different among market segments. Companies dealing with the utility-scale projects bigger than 5 MW expressed their concerns that due to change of the system the demand will decrease significantly leading to the overall decrease of the industry

as the growth residential and commercial segments, according to them, will not compensate the lost interest in the large-scale projects that are currently driving the market growth. They also added that although some incentive system for large-scale installations will remain, the uncertainty in the implementation and new conditions will discourage large investors to consider the solar PV market as an attractive investment. Such situation might cause significant problems for the implementation of the goals for having 20 GW of solar capacity installed by the 2020.

Companies dealing with the smaller projects, on the other hand, are positive about the change as the demand for their products is expected to increase, especially for commercial applications. However, such shift may encourage companies that were previously operating in large-scale projects looking for new market segments which may result in the increased competition.

Several industry segments were identified by the respondents to have the highest likelihood to grow under the new system. Most of the respondents acknowledged that large-scale industrial roof mounted systems that currently fits under the ROO-FIT incentive scheme are expected to have a high growth rate. In addition to that, some participants indicated BIPV segment due to high returns on investment, governmental strategy to promote such installations as well as the directive of the EU for nearly-zero energy buildings (NZBs).

Limitations of the empirical research

Taking into consideration that respondents represented the companies that currently operate in the UK solar PV market, strategic management is a sensitive topic especially if the questions concern market entry and customer behavior both of which are regarded as confidential information. Therefore, many of the representatives declined to participate in the research while others shared the information unwillingly which may had an effect on the comprehensive data collection.

Secondly, experts and consultants of the industry, although having the necessary market knowledge and experience, were reluctant to share the information for free.

Conclusion

Even though the participation rate of the respondents was low, the aim of the empirical research was achieved. Data analysis revealed the most prominent market trends as well as the important considerations for developing a market entry strategy. Important conclusion of the empirical research is that the respondents provided similar information as was included in the secondary data analysis, explained the causes behind customer behavior and shared their opinion regarding the expected market developments. Summarizing the research findings, the UK solar PV market can be described highly competitive with a strong pressure on price which is considered to be among the important factors behind purchase decision.

Managerial Solutions

According to both external and internal analysis, selected theoretical framework, and the primary information gathered during the empirical research, the aim of this part of the paper is to develop the suggestions that would allow for creation of a feasible market entry strategy for the UK solar PV market. Major questions of this part are the choice of the market entry strategy and the means to implement it.

Suggested market entry strategy

Taking into account the intense competition in solar PV market in the UK combined with the significant pressure on price and low operational capacity of SoliTek restricting the economies of scale, competing in the large-scale or mass market is not feasible in the current state of the company. Therefore, it is advised for SoliTek is to focus on the niche segments of the industry.

It also has to be acknowledged that industry is not a static environment. Due to this fact, adaptive approach to strategy, proposed by Reeves, Love & Tillmanns (2012), is considered to be the most suitable for a new entrant due to low power that SoliTek currently has to influence the development of the market. Therefore fast decision making skills and ability to adjust to the changing market conditions should be emphasized while developing and implementing the market entry strategy.

Selection of market entry mode

As mentioned in the previous parts of the paper export is the preferred entry mode for SoliTek due to limited knowledge on the market specifics and low company's significance in an international context. Such entry mode enables a company to offer its production to the foreign market while maintaining the production facilities in the home country, requires minimal investment, and is associated with the lowest risk among the entry modes. The guidelines for strategic export plan were proposed adhering to the export steps developed by Darling & Seristö (2004).

Analysis of market opportunities and product potential. Considering the fact that a good strategy should combine the internal strengths and capabilities of the company with the factors of the external environment that a company operates in or is trying to enter, SWOT analysis provided in the Table 8 discusses the most prominent external trends as well as the internal strengths and weaknesses discussed in the first part of this paper.

Table 8.

SWOT analysis

Strengths	Opportunities
1. High efficiency modules (PERC and PID-Free technologies); 2. PIB rim technology: a) Increased longevity; b) No frames required; c) SoliTek is the only company in the world to have this technology; 3. Long warranties (20 years); 4. Flexible production – cell size and color, module dimensions and shapes.	1. Change of policy to switch from large-scale to promote small-scale electricity generation; 2. EU directives on nearly-zero energy Buildings (NZBs).
Weaknesses	**Threats**
1. Low operational capacity limits the economies of scale 2. Low brand awareness; 3. Negative perception towards the country-of-origin.	1. Hostile competitive environment dominated by large international players; 2. Significant pressure on price due to strong Chinese manufacturers' participation;

Note. Developed by author.

Strengths. Major strengths of SoliTek are in its innovativeness in product development. In addition to the fact that a company can produce the products of high efficiency using PERC and PID free technologies, SoliTek is also the only company in the world that use PIB rim technology, which ease the installation process, improves longevity of the production and thus allows company to offer longer warranties than the majority of other market players. In addition to that, production flexibility can be considered to be among the most prominent strengths of the company as the production can be highly customized according to the different needs of the customers.

Weaknesses. Among the main weaknesses low operational capacity, low brand awareness, and negative associations towards country-of-origin can be identified. Low operational capacity not only limits the economies of scale, but may also result in shortage of the inventory in case of increased demand. Furthermore, both low brand awareness and

negative perception towards Eastern Europe may hinder the sales potential even if the production adheres to all the customer needs.

Opportunities. From external point of view, shift in the incentive policy to support small-scale low-carbon electricity generation may be regarded as a favorable opportunity for SoliTek as it is expected to increase the interest in Solar PV solutions in the residential and commercial segments which currently has lower competition than the large-scale solar PV projects. In addition to that, favorable market developments are expected to occur after 2016 when the directive for Nearly-Zero Energy Buildings will be implemented which, as discussed in the first part of this paper, is anticipated to contribute to the customized Solar PV installations demand increase for BIPV sector.

Threats. Considering the threats, competitive environment is by far the largest threat to the SoliTek. The market already has a number of internationally recognized market players with already established brand names among which Chinese producers have the most significant contribution. Taking this into consideration, pressure on prices is very strong which may cause problems in competing with low-cost providers if they decide to expand the market coverage in light of incentive policy change.

Considering the information provided in the SWOT analysis and the empirical research, innovative products of SoliTek may find their place in the Building Integrated Photovoltaics segment which has a high growth potential and is not yet highly competitive. To attract the attention of the segment, SoliTek should communicate their flexibility in terms of available shapes and module dimensions as well as put a special emphasis on the aesthetics of the production – ability to produce colored and transparent products combined with the quality and efficiency of the crystalline technology. It is also crucial to mention the provided warranties which has an effect on the perception regarding the quality of a product and helps to form a favorable brand image.

Allocation of the necessary resources. After analysis of both market specifics and product potential, the required human and capital resources have to be identified and allocated. While planning and implementing direct export market entry strategy capital requirements and the human resources are equally important parts to ensure the steady process. From the financial perspective, it is important to prepare for the demand fluctuations and keep a certain stock level at all times. In the early stage of operations it is difficult to distinguish the exact periods for fluctuation, thus it is suggested to keep constant track of the demand and plan the later production processes accordingly. Moreover, company should be prepared for the price fluctuation for raw material and keep a certain amount on financial reserves available.

From the viewpoint of human capital, the most important resource is time. In the early stages of market entry strategy development and implementation, personnel involved in the crafting and implementing the market entry strategy should have a reduced work load to concentrate on the strategic management process. It is also advised that lower level managers that will be working with the market were included into the process to increase their involvement and provide for an understanding about the strategic direction of the company.

Identification of the technical issues. Acquiring the necessary certifications can be considered to be among the most important technical issues to deal with. Even though the production can be sold without any certificates in the UK, Microgeneration Certification Scheme (MCS) is required if a customer is to apply for the incentive schemes. Due to this fact, it is essential for SoliTek to get MCS certified as soon as possible.

Microgeneration Certification Scheme indicates that a product adheres to the highest quality standards, therefore both the company and its products have to undergo the various inspection procedures that include inspection of the manufacturing facility, raw materials used, qualification of the employees, specifications and intended purpose of the final product.

Once the certification is acquired, quality norms are maintained by the annual quality checks by the United Kingdom Accreditation Service (UKAS) certified companies.

It is important to discuss the costs for acquiring the MCS standard. Prices of BRE Global Ltd. were discussed as the company deals with all the segments of the renewable energy generation market and certify both installers and producers. These conditions are expected to ensure higher experience and credibility.

Taking all the prices[7] into account, if one technology is being certified, the first year totals between 2565£ (approx. 3276 €) (duration of the factory assessment – 1 day) and 3945£ (approx. 5038 €) (duration – 3 days; excluding VAT and travelling costs), whereas afterwards an annual fee accounts for 1465£ (approx. 1871 €) (excluding VAT, travelling costs and product review).

To cover these expenses, SoliTek is suggested to apply for support programmes proposed by the Lithuanian government. "Expo Sertifikatas LT" is aimed at covering the expenses for the certification required for international expansion and improvement of competitive positions. Under current policy SoliTek can apply for the support up to 144810 € with the intensity of 50% meaning that half of the expenses can be covered by the support funds.

Continuing the discussion on the technical issues of market entry, taking into consideration the free trade among the members of the EU, SoliTek is not subjected to any tariff duties or specific export documentation which ease the export process. Important documentation, however, remains the contracts with partners in the UK. Taking into account the data collected in the empirical research, SoliTek is strongly advised to establish partnership with the local installers that would act as the distributors of SoliTek's production. Important step in establishing a partnership is to sign the cooperation agreement which would

[7] Certification fees of BRE Global Ltd. are provided in the Appendix 4.

establish the terms of the cooperation, method of payment, delivery terms, and the legal procedures in case of the disputes.

Contract signing requires drawing the attention to several issues. Firstly, it is important to distinguish whether a foreign partner will act as an agent (promotes the production) or as a distributor (buys the production and distributes it). It is advised to choose a distributor instead of an agent due to higher commitment and interest in successful promotion, the ability to keep stock, and provide service support for the production (Canadian Professional Sales Association). However, distributors often tend to demand exclusive rights to the production which restricts the company to deal with other distributors or agents (Segal & Whinston, 2000). Therefore, to avoid missing the potential market opportunities, SoliTek is advised to consider pursuing agreements with more than one distributor.

The method of payment and the delivery terms will depend on the mutual agreement between both sides of the contract. Normally, distributors tend to ask for the possibility to postpone of the payment, however it is suggested to negotiate for the advance payment until the trust between parties is established. Instead of postponement of the payment, SoliTek could propose to facilitate a pilot project with favorable conditions (e.g. price, delivery). This would allow the foreign partner to evaluate the potential of the product and could provide for larger order size for the future purchases as well as give the time for SoliTek to decide whether the partner adheres to the expectations of the company.

Considering the delivery terms, the most recognized system to define the terms is International Commercial Terms (Incoterms). Taking into account that land transportation has the optimal delivery time/cost ratio to transport goods in Europe Ex Works (EXW), Free Carrier (FCA) or D class terms (Delivered at Place (DAP) and Delivered Duty Paid (DDP)) should be negotiable.

Table 9.

International Commercial Terms

Term	Description
Ex Works (EWX)	A seller makes goods available at the buyer's disposal on the seller's premises. Buyer is then responsible for the delivery of the production as well as tariff duties and other legal procedures, if any.
Free Carrier (FCA)	Seller delivers the goods to a carrier appointed by the buyer. Buyer takes all the risks and costs associated with the delivery from the facilities of the carrier to buyer's premises. Tariff duties and other legal procedures, if any, is handled by the buyer
Delivered at Place (DAP)	Seller has to deliver the goods to the premises of the buyer and make it ready for the disposal. Seller takes all the risks associated with the transportation while the buyer is responsible for all the customs' formalities, if any.
Delivered Duty Paid (DDP)	Seller is responsible for bringing the goods to the premises appointed by the buyer, takes all the risks and costs of the transportation, and is responsible for the customs' formalities, if any.

Source. International Chamber of Commerce (2010).

Note. Adapted by author.

Considering the importance of the final price for the product in the UK market, ideally the delivery terms are chosen such that would minimize the overall transportation costs and ensure the safe delivery of the goods. Therefore it is important to identify which party would be able to arrange secure transportation for the lowest price.

Developing strategic marketing plan. According to the theoretical model, development of the strategic marketing plan combines all the previous steps of the framework yet depends on the individual cases of the business according to the priorities of the company. Taking into consideration the changing incentive policy fast decision making regarding market entry is essential, thus the most important suggestions for strategic marketing plan are

the selection of a target market, getting MCS certification, finding local distributors and signing a cooperation agreement.

Table 10.

Strategic marketing plan

Task	Objective	Resources	
		Time	Money
Evaluate the opportunities in different market segments	Selection of a target market	2 weeks	Internal costs
Select the target market according to the strategic goals and objectives		1 week	Internal costs
Prepare for MCS certification	Acquire MCS certification	5 weeks	Internal costs
Hire certification agency to audit the company		2-4 days	3276 €-5038 € VAT, travelling and accommodation costs
Search for local distributors	Selection of the distributors	1 week	Internal costs
Contact the distributors and offer a partnership		1 week	Internal costs
Evaluate the proposals received		2 days	Internal costs
Clarify the cooperation terms		2 days	Internal costs
Sign the cooperation agreement with the selected distributors		1 week	Internal costs Costs of transportation and accommodation
	Total	6-7 weeks	3276 €-5038 €

Note. Developed by author.

Taking into consideration that all three objectives can be pursued simultaneously, the duration of this marketing plan is expected to to be 6-7 weeks and should cost around 3276 €-5038 € excluding the VAT for certification service, transportation and accommodation of both representative of a certification agency as well as for the representative of SoliTek who will travel to meet the distributor and sign the cooperation agreement. In addition to that, internal costs are also excluded from the cost calculation as it is considered to be the confidential information of SoliTek.

It has to acknowledged that even though the communication of the product specifics is very important, this step is suggested to be performed after the completing the proposed strategic marketing plan as the selected distributors are expected to provide valuable insights to marketing of the product to avoid cultural misunderstandings.

Organization of an operational team. Important success factor for a foreign market entry strategy is to assign the right people for the job. Considering that the purchase decision significantly depends on the technical characteristics of the product, sales team should understand the product features and have some international sales experience in a technical field. Furthermore, to optimize the working process, clear definition of roles, responsibilities, and decision-making rights are important. What is more, to ensure effective communication with the foreign partners and potential clients, it is essential that the members of the operational team be fluent in English.

Finally, taking into account the adaptive approach to strategy, SoliTek should consider hiring an analyst to track the market development, look for new niches in the market as well as monitor the process of the company itself. This would ensure the faster identification of potential opportunities which can then be capitalized on to strengthen the competitive position in the market

Implementation of the market entry strategy. Once the previous steps are adhered to, company should be ready to implement the proposed market entry strategy. Necessary resources are suggested to be kept in case of any unforeseen contingencies. After the implementation of the market entry strategy, it is important to improve the capabilities and put continuous efforts to strengthen the competitive advantage relative to the competitors in the market.

Establishment of the evaluation and control mechanisms. In order to ensure successful execution of the strategy, continuous monitoring of the company performance comparing it to the intended plan is suggested. This step is expected to provide the insights on whether the plan is being executed according to the preset criteria and leads to the defined goals and objectives. In addition to that, it allows identifying the causes for any deviations early and enables the decision makers to either find the causes for the problems or adjust the plan accordingly. These control mechanisms are suggested to be used in tracking both the individual company performance as well as the performance of the local distributors to optimize the execution of the desired market entry strategy.

Additional considerations

Although a market entry strategy is of high importance to the SoliTek, there are certain aspects that were not included into the framework proposed by Darling and Seristö. Among the most important is the improvement of brand awareness which, according to Thanh (2012), is "the ability for the customer to recognize or recall that a brand is a member of a certain product category". Thanh (2012) also explained that brand recall is the extent to which a customer knows the brand whereas the brand recorgnition refers to the ability of a customer to find connections between the brand and its attributes. Taking this into consideration, emphasis should be put on the improvement of the visibility of the company which is suggested to be achieved in several ways.

Firstly, it is recommended for SoliTek to participate in the Solar PV fairs to increase its brand awareness in an international context which was claimed to be an important attribute for competing the the UK market. Even though only one fair – Solar Energy UK 2015 - is planned to take place in the United Kingdom, it is also advised to visit fairs in other European Countries as well. Especially important are the fairs in Germany as it currently is the biggest solar PV market in Europe. Participation in the exhibitions in Germany would provide the access to biggest solar PV market players and would not only allow evaluating the production against the competitors but could also provide opportunities to find credible partners in the UK. Among the biggest fairs EU PVSEC 2015 and Silicon PV 2015 can be identified. It is also important to mention that participation in the exhibitions is not cheap. Fortunately, governmental aid can be used. SoliTek is advised to apply for a support scheme called "Naujos Galimybės LT" which is aimed at increasing the internationalization of small and medium Lithuanian companies by encouraging them to participate in the international fairs and exhibitions. The scheme provides up to 50% coverage of the expenses for stand and human resources which helps a company to attend more international events than it would have been able to visit otherwise.

Secondly, business missions and company visits can be used as a useful mean of establishing business relationships. Even though such option is more expensive than communicating through electronic means, direct contact has a far greater effect in building relationships. The fact that companies are willing to meet in person shows their common interest in possible business partnership opportunities. However planning and facilitating such meetings also requires time and effort. It is advised in this case to contact Lithuanian Embassy or the Lithuanian Chambers of Commerce in the UK to assist in organizing such meetings. Both of the organizations have the experience, resources, and a network of partners that make a process easier for all parties. This solution is expected to result in significant time

savings for SoliTek while providing an opportunity to find long-term business partners. It may also be considered to invite the representatives of possible partners to visit the manufacturing facility of SoliTek to show that, despite being an Eastern European producer, company is technologically advanced and can be regarded as a reliable partner.

Finally, it is necessary to discuss the country-of-origin effect. Taking into consideration the results of the empirical research, it is suggested to avoid too much association with Lithuania as a country-of-origin and rather emphasise that the products are "made in EU". Even though especially visible in the residential segment of the market and slightly less in other market segments, British customers still associates Lithuanian with the former Soviet Union, and in light of recent tension between Russia and the Western World, any connections with Russia might hinder the sales potential while European-made products are perceived favorably.

Conclusion

Last part of the thesis was dedicated to the development of the market entry strategy for SoliTek Industry OU to enter the United Kingdom's photovoltaics market. The initial step of the managerial solutions was the choice of the approach to the market entry strategy and the entry mode. Adaptive focus strategy was proposed in combination with the direct export mode as the basis for the development of a market entry strategy. Latter part of the managerial solutions was dedicated to the export steps, according to the theoretical framework proposed by Darling & Seristö (2004). Major solutions for export market entry included the following aspects:

1. Building Integrated Photovoltaics segment was proposed as a target market for SoliTek;
2. Strong communication of the product features – efficiency, longevity, customized production, provided warranties – is suggested;

3. Microgeneration Certification Scheme (MCS) should be acquired as soon as possible;
4. SoliTek is advised to partner with several local distributors to increase the local involvement;
5. Performance control mechanisms are an essential part in tracking the implementation of the intended market entry strategy.

In addition to the parts of the theoretical framework, several considerations were proposed according to the empirical research:

1. It is essential for SoliTek Industry OU to increase the brand awareness. This is suggested to be achieved through participation in the international fairs, business missions and company visits;
2. Company is advised apply for the support programmes for international expansion ("Expo Sertifikatas LT" and "Naujos Galimybės LT") to cover part of the expenses for a market entry strategy;
3. "Made in EU" is suggested to be promoted instead of "Made in Lithuania" due to Lithuania's rather negative country-of-origin perception.

Conclusions

Several conclusions can be made summarizing the thesis:

1. Situational analysis of SoliTek Industry OU was performed which provided the following conclusions:
    a. The internal company analysis was carried out which allowed identifying the major strengths and weaknesses of the company. According to the analysis, the strengths of the company are the innovativeness and technological development of its production. Efficiency, longevity, ease of installation and customizable solutions were identified as features for gaining the competitive advantage in the selected segments of the market. On the other hand, limited market knowledge, low operational capacity, and low brand awareness might have a negative effect on the sales prospects in the UK market.
    b. External market analysis focused on revealing the most prominent United Kingdom's solar PV market trends such as high growth rate and anticipated future developments as well as the success factors for market entry. Moreover, distinctiveness of the customer segments was identified which allowed choosing the target market for international expansion. In addition to that, competitive analysis was performed to evaluate SoliTek's competitive position in the market which can be described as a highly competitive with a significant pressure on the prices.
2. Literature review analyzed the theoretical information for developing a market entry strategy, choosing the approach to strategy as well as the selection of market entry modes. Planning model of steps for success in export markets,

proposed by Darling & Seristö was identified as a suitable theoretical model and was applied for development of a market entry strategy.

3. Empirical research was carried out to get a comprehensive view from the UK solar PV market players and experts. 10 qualitative semi-structured interviews were done yet one interview was omitted from the analysis due to lack of specific market knowledge. The analysis of the collected data allowed uncovering the specific issues such as the importance of a local presence, influence of the country of origin to the customer behavior as well as the product features preferred by the customers and the expected market developments. In addition to that, personal experience of the respondents provided for valuable insights to the development of a market entry strategy.
4. All previous parts of the paper were combined to propose the managerial solutions that allowed reaching the aim of the thesis – to develop a market entry strategy that would allow SoliTek Industry OU to enter UK's photovoltaics (PV) market. The proposed market entry strategy included the approach to strategy, selection of an entry mode as well as the target market, identified the technical issues, advised to implement monitoring and control mechanisms, and provided the suggestions for improvement of brand awareness.

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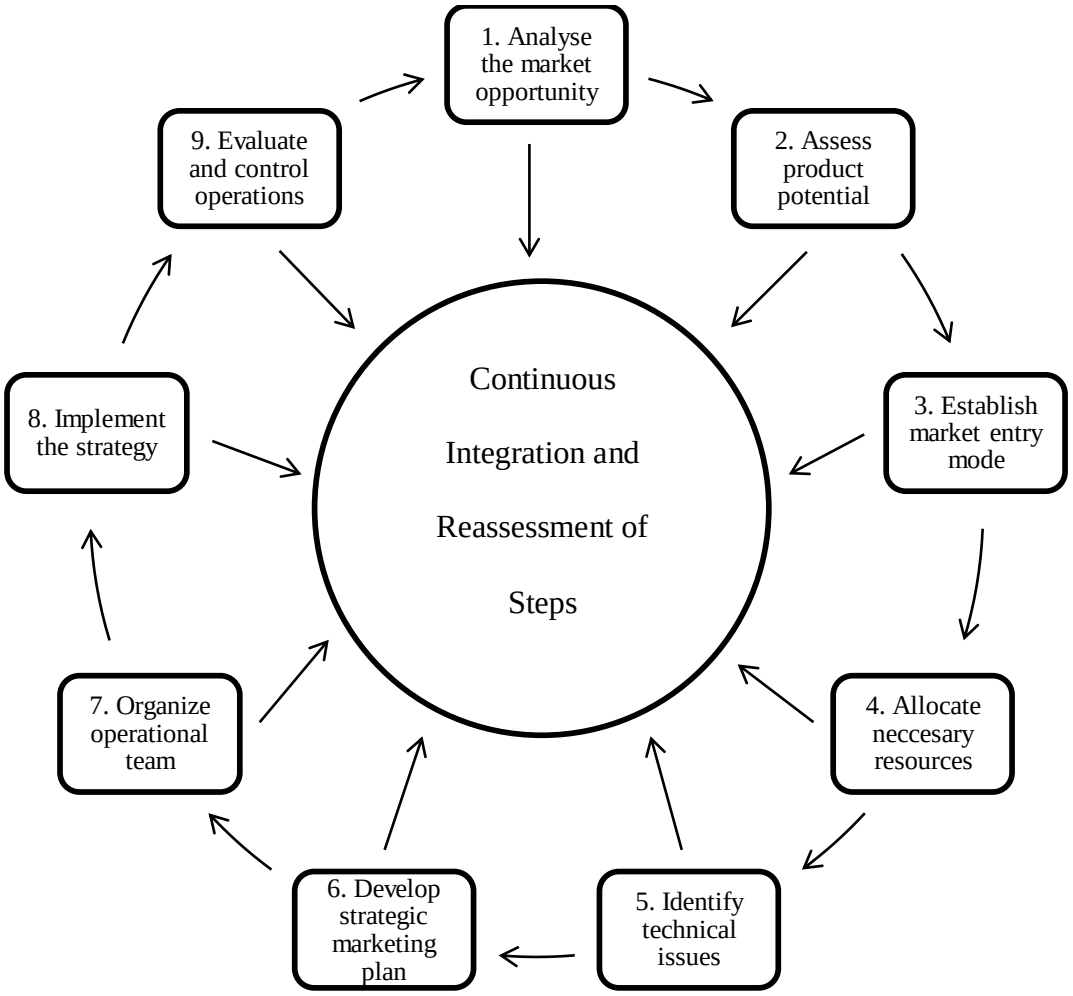
Appendixes

Appendix A. Glossary

1. Photovoltaics (PV) – (photo – Greek for "light", volt – unit to measure electric potential at a given point) is a process of converting solar radiation into electricity.
2. Building Integrated Photovoltaics (BIPV) – systems and concepts in which photovoltaics, as well as having the function of producing electricity, also is used as a building materials.
3. Potential Induced Degradation (PID) – power-induced output degradation caused by leakage currents.
4. PIB rim – technology used for coating the edges of the product which improves durability and longevity of the product.
5. Passivated Emitter Rear Cell (PERC) – technology, developed by Roth & Rau AG, which increases the efficiency of solar cells in standard solar cell processes.
6. High Efficiency (HE) – term used to describe the multi crystalline solar PV cells with efficiencies higher than 17.8%.
7. Feed-in Tariff Scheme (FITS) – incentive scheme introduced by the Government of the United Kingdom to promote small-scale low-carbon electricity generation.
8. Renewables Obligation Certificate (ROC) – incentive scheme introduced by the Government of the United Kingdom to promote large-scale low-carbon electricity generation.

9. Microgeneration Certification Scheme (MCS) – an internationally recognised quality assurance scheme, supported by the Department of Energy and Climate Change of the Government of the United Kindgom.
10. Nearly-Zero Energy Building (NZEB) – is a building that has a very high energy performance index.
11. International Organization for Standardization (ISO) – world's largest developer of standards. ISO standardization ensures that products and services are safe, reliable and of good quality.
12. TUV – certificate that verifies that the product satisfies the strictest European regulations for the industry in which the component was designed for and ensures the component specifications are stated correctly.

Appendix B. Planning model of steps for success in export markets



Source. Darling & Seristö (2004, p. 30).

Note. Adapted by author.

Appendix C. Questionnaire

1. Please introduce briefly the activities and products of the company.
2. Would You please share Your insights on what has changed during Your years of operation in the market?
3. Have You faced any problems with the UK's solar PV market? Please describe them, if there are any.
4. During past several years UK solar PV market has been growing steadily. In fact, in 2014 the country has the highest amount of solar power MW installed in Europe. What could be the reasons for such growth?
5. Is there a significant Country-of-origin effect in choosing a supplier or a product?
6. How important for a foreign company is to have a local sales office or a local distributor?
7. What are the major customer segments in the market? How different are they?
8. What are the major product benefits that the UK customers are seeking?
9. What are the major selection criteria for purchase decision making?
10. How would You evaluate UK solar PV market's competitive environment?
11. According to the reports of NPD Solarbuzz, 7 out of 10 suppliers for solar PV modules in the UK are the Chinese companies. How do European producers compete with Chinese suppliers?
12. What effect do You think the change on an incentive policy to low-carbon electricity generation will have on the market?
13. What technological changes can be anticipated until 2020?
14. Which industry segments are expected to grow the most until 2020?

Appendix D. Question-respondent matrix

Respondent	John Bickley - senior technical sales at Victron Energy
Question	Answer
Please describe Your business.	We produce storage systems for the domestic houses. Also we are doing large storage systems for the industrial companies in the commercial sector and export our production overseas.
How many years are You in the business?	This is our first year in the solar market.
What are the causes behind recent growth of the UK solar PV market?	Feed-in tariff scheme started the initial surge of interest. But as the feed-in tariffs are decreasing the interest didn't seem to go down that much. Now the growth remains purely because of rising cost of energy. And also people are worried about not having enough energy. We have a problem that there is only 1% of capacity on our whole grid. If You get a really cold winter, we occasionally get brownouts or blackouts. The situation is expected to get worse rather than better.
Is there a preference for local products?	Not really. Customers are looking for European products because they associate European producers with a better quality. There is still a big distrust for Chinese products especially in our business even though the prices are significantly lower.
How important is for a foreign company to have a local sales office or a distributor?	Very important. You need local people on the ground because these products need support.
Is the brand name an important factor for the customers of the UK?	Yes, of course. Some companies are well-known in the market and therefore considered trustworthy.
What do You think the future is for the UK solar PV market?	The growth is shifting from domestic to commercial, bigger systems and government organizations. The growth will remain and the number of units or kWh will continue to increase, but the market would shift from domestic to other areas. Building Integrated PV is promising as they allow for up to 30% of returns on investment which is appealing to the commercial segment.

Respondent	Raphael Henkel - key account manager at Ingeteam
Question	Answer
Please describe Your business.	We are a Spanish inverter-producing company with offices in many countries.
What is Your experience with the UK market?	In 2011 we had a big project with a Spanish company. Since then we have experienced a big growth in demand at the end of 2013 and also this year, however now the demand is decreasing due to the changing incentive policy of the UK government. Starting from March the policy will be changed not in favor of big projects in the UK. Previously we were working with the projects bigger than 2GW, however, due to changed policy for project bigger than 5GW the demand will continue to decrease.
What effect would the change in the incentive policy have on the market?	I think that this change will have a significant impact on the large-scale energy generation and I am not sure about the effect on the smaller – scale. I do not think that it will be significantly bigger than the decrease suffered from loss of large-scale investments. However, the Government in the UK is dedicated to promote solar energy generation, so I think that industry will still be growing.
Is there a preference for local products?	We did not have any problems with that. To my knowledge there are no big inverter manufacturers in the UK. In addition, Germany and Spain being a developed solar energy markets are considered good partners for projects.
In 2013, 7 out of 10 suppliers in PV modules were Chinese. How intense is the competition from Asian producers in Your business field?	That is true in the module market, however the inverter market is different. There are more and more Chinese companies entering the UK market that can offer very low price, but the product quality is also low. In inverter market the quality is very important, therefore the Chinese currently are not the major competitors for us. Considering the fact, that European Countries want to protect their producers, certain trade barriers might be imposed to Chinese companies.
Which attribute - price, quality or differentiation - is the most important in the UK market?	They are all very important in the any market. I would say that the best is to provide new product with high quality for good price. But if I have to say just one – in inverters industry I think quality. You can offer very low price, as Chinese do, but if the quality is bad no one will buy it for second time when it break. This is why now European manufacturers are still ahead. I do not know much about the solar PV module market, the situation there might be different.

Respondent	Kevin McIntyre - Applications Modelling Engineer at Oxford PV
Question	Answer
Please describe Your business.	We are a spin out from Oxford University producing thin film solar PV modules for Building Integrated Photovoltaics.
Why did You choose BIPV as Your target segment?	BIPV is a developing market, although it is already here in small volume, mostly with glass-glass laminate silicon PV modules. For it to take off in volume it has to be an easy decision for architects and construction companies. Today, that is not the case. Part of the reason for choosing this market was early engagement with architects, ability to do both opaque and semi-transparent products, and in BIPV you are not competing with silicon directly, as silicon cannot be used heavily in the vision part of a facade (architects do not like the look of silicon glass-glass modules).
What is Your experience with the UK market?	Since our establishment in 2010, we have seen a number of competitors make a number of claims and hype, sadly not based on fact. This has given organic PV and similar thin-films like us a particularly bad name. We have also come to realize our approach of coating directly onto glass was very fortunate insight, based again on early conversations with architects. To meet the lifetime expectations for a façade, encapsulation is vital. Glass is the best encapsulate we have seen. We have seen other companies who want to do BIPV with thin-film PV encapsulated in plastic roll, and then in glass- it works but it is not pretty.
What effect would the change in the incentive policy have on the market?	The Government and Department of Energy and Climate Change are really pushing roof mount systems, and BIPV now forms part of their strategy. This can only be a good thing for BIPV. However, it is also likely to drive solar quicker to solar farms that do not need incentives. I understand that is not too many years away from the solar industries perspective.
In 2013, 7 out of 10 suppliers in PV modules were Chinese. How intense is the competition from Asian producers in Your business field?	In the BIPV market not really. As I mentioned they are not usually considered for facades as architects do not like the look of silicon BIPV products.
What are Your predictions or expectations for the future development of the UK solar PV market? Will the planned 20 GW of capacity be reached by the 2020?	It is really hard to judge. Personal view, we absolutely need to get there- the longer we do not push as hard as we can, the harder the step will be to meet our EU targets, especially as beyond 2020 they are only getting tighter. The Government's policies towards solar will clearly have an impact on how quick we get there. As we are approaching a general election it will be interesting to see what changes if anything.

Respondent	Kai Schuebel – Director at K2 Solar Mounting Solutions Limited
Question	Answer
Please describe Your business.	We are the UK subsidiary of an internationally operating manufacturer of mounting systems for the solar industry with headquarters in Germany. Our portfolio provides for mounting solution for nearly every roof type.
Have You faced any problems with the UK's solar PV market? Please describe them, if there are any.	As with all PV markets the UK market has been very volatile so far. This is mainly due to subsidies which a government puts in place to get the renewable energy sector started and after it caught up the subsidies are cut. In the UK, now after a few years, government seems to have found their way in cutting FITs every quarter by 3.5%, which helps to steady the market over the year. The last few weeks before a cut we see a small rush, but nothing like back in 2011 where a cut of more than 40% was announced and subsequently the rush was manic. We, the solar industry in the UK seem to have made the government comprehend that solar is a good and necessary thing to reach their CO2 emission reduction goals by 2020.
During past several years UK solar PV market has been growing steadily. What could be the reasons for such growth?	This growth was mainly due to a lot of permitted solar farms around quarter 2/2014. So utility scale projects, especially in Q2/2014 account for the growth of the market. Government now will cut the ROC subsidy for solar farms by end of March 2015, we won't see many solar farms after that, for it now will not be interesting enough anymore for investors. The whole solar farms were very much investor driven business. The on-roof market (domestic and commercial) was with 600MW smaller than 2013 and I expect only a small growth in 2015. So the overall market size (domestic, commercial roof top and solar farms) will be smaller than 2014
Is there a significant Country-of-origin effect in choosing a supplier or a product?	There is this effect but it is not significant. UK customers like products manufactured in the UK, but at the end of the day most of them buy the cheapest option which normally isn't the one produced in the UK.
How important for a foreign company is to have a local sales office or a local distributor?	Very very important. You need to understand the needs and habits and processes of a country and its people/customers. Every country is different in this respect. Without being local you will never be very successful, or only when you are the cheapest. In the UK instant availability with deliveries on a next day basis is key to success.
What are the major product benefits that the UK customers are seeking?	Price, ease of installation, ease of design
How would You evaluate UK solar PV market's competitive environment?	Very competitive recently, with most other European market scaling down many companies from the mainland are pushing into the UK market and the UK market is not big enough to cope with all these new manufacturers, distributors, installers etc.
Currently 7 out of 10 suppliers for solar PV modules in the UK are	European module manufacturers are struggling, most inverters are also coming from Asia, regarding the mounting systems it is a bit better for mounting kit from China is cheaper but the Chinese

the Chinese companies. How do European producers compete with Chinese suppliers?	company can't cope with regular supply. Hardly a customer is big enough to buy a shipping container full of kit in a go.
The officials in the UK are planning to change the incentive plan to shift from large-scale low carbon energy generation to a smaller-scale. What effect do You think it will have on the market?	We are strong with products for on roof systems, so moving away from solar farms more to roof top will certainly be good for us.
Which industry segments are expected to grow the most until 2020 (ground-mounted, roof applications, BIPV, other)?	Definitely on roof applications on the many business properties in this country. BIPV is interesting mostly in London or some other big cities, but the growth in this sector will not be massive.

Respondent	Matthias Goldbach - Senior Product Manager at Hanwha Q-Cells
Question	Answer
Please describe Your business.	The company Q – Cells was opened in 1999 as a solar PV production company in Germany. However, financial situation in 2010 led the company to bankruptcy. Then Korean Hanwha corporation bought the company and from then on we are called Hanwha Q-Cells from 2012.
What technology are You currently producing?	We have mono crystalline and multi crystalline on the standard modules. In addition to that, we produce Quantum model of cells which have higher power output due to different technology. We put reflecting layer on cells that reflect more light which means we produce more electricity with the cells. Highest efficiency that we managed to produce was 19.5% which was a world record at the time.
Why did You choose crystalline technology instead of thin film?	We were producing thin film as well. We had a company called Solebo in our portfolio but we sold it in 2012 and shifted to the crystalline technology only. My personal opinion is that it will be the future on one day. For example, First Solar have very ambitious goals to get the module power and efficiency up to the crystalline technology. Then, due to the fact that the costs for producing the modules will be lower, it makes an influence. But until this level, for my personal point of view, we will stay with the crystalline technology.
I have read that currently there is a lot of competition coming from Chinese suppliers such as Trina, ReneSola, Yingli. How do You deal with them?	We have the Hanwha corporation. It wants to merge Hanwha SolarOne and Hanwha Q-Cells. After the merger we will be the worldwide biggest solar business manufacturer. That is the only way – use economies of scale to keep up with or beat the competitors You have mentioned. So it means that we have to have a very high output to reduce fixed costs. However, other companies are cutting costs in expense of quality. We are only going to reduce costs if the materials we are using will keep the quality we are expecting to have.
Is the quality of Chinese products are similar to Yours?	Obviously, as a representative of Q-Cells I have to say no, but they are keeping up and getting better. But they are not in the same level yet from the quality point of view. Actually, it is very difficult to distinguish for the customers, because modules are looking the same, the power outputs which are on the label or in a datasheet look nearly the same. But therefore You have to look a little bit more to the details. For example the warranties we offer are better compared to our Chinese competitors, the quality the customers are getting is definitely better. Due to the fact that we know the quality is better, we are able to offer longer warranties.
What are the main product features that the customers are looking for when choosing a product?	This depends on the customer segments. If we are talking about the residential segments, aesthetics is definitely one of the factors. Then You have the power. On utility and commercial sides one thing is the quality of the product. For utility segment they have often tenders in combination with banks. And banks want security. There are several factors and features not only for the modules, but more for the company itself (if the company is bankable). With

	Hanwha corporation we have the financial strength from one side, and the quality of the products makes it easier to tell the banks that our products will be bankable. In addition to that, banks are looking very deep for the warranties. Aesthetics is definitely not the most important thing for the tenders, however it is changing from one customer to the other.
Is the brand name an important factor for customers?	It is very important. There are some markets that the brand of Q-Cells is already known and there we can increase the awareness of our brand. And then there are some other markets which are developing at the moment where we have to establish our brand image and create awareness.
The officials in the UK are planning to change the incentive plan to shift from large-scale low carbon energy generation to a smaller-scale. What effect do You think it will have on the market?	At this stage of the year the utility parks are the fastest increasing segment of the market. The residential market will come as they are changing the system now while the large scale project will probably decrease. At this point it is difficult to predict the scope of the change.
How important is it to have a local distributor or a sales office in the UK?	It is very important. We already had some kind of representative office in the UK, but we are planning to change it to some kind of legal entity - Hanwha Q-Cells UK – as we are planning to strengthen our position in the UK market. It is better to have a legal entity there.

Respondent	Undisclosed - PolySolar
Question	Answer
Please describe Your business.	We were established in 2007. Currently we are involved in Building Integrated solar PV construction projects.
Do You produce Your modules Yourself?	No, we have a contract manufacturer.
Why did You choose thin film instead of crystalline technology?	We operate in BIPV and believe that this technology is more efficient. In addition to that, it is cheaper and allows for wider applications. We believe that BIPV has a high future potential due to a number of regulations proposed. Even though BIPV is not yet developed but we believe that this segment will grow in the future.
What were the most significant changes in the industry since 2007?	I would consider the incentive programmes among the most important changes that lead to the most significant market developments.
How would You evaluate the current incentive system?	I believe that is has both strong effect as well as negative sides to it. It helped to promote the interest in the solar PV generation, however mostly in large scale energy generation. Prime goal for these generators is financial rewards. We believe that a good system should not work like this. With recent changes, I believe that the policy is heading to the right direction.
In 2013 70% of total modules supplied in the UK were from Chinese producers. Are Chinese suppliers also a competitors in You industry?	These figures might be correct, however, most of them currently supply large projects, mainly solar farms. As BIPV is still a growing segment, there is not much competition yet. But the market constantly changes and it is possible that Chinese companies eventually will try to enter BIPV. On the other hand, most of Chinese modules are of crystalline type which is a competing technology for thin film. We believe that ours is better suited for BIPV.
Do You think that with the recent change of incentive policy UK will reach its goals to have a total of 20 GW of capacity installed until the 2020? How much of it will be BIPV?	I believe that this goal is attainable. As for BIPV, I cannot predict the exact figures, but we believe that it will have a high growth numbers.

Respondent	Tobias Beisheim - Technical Sales Support at SMA Solar UK
Question	Answer
Please describe Your business.	We produce inverters, smart solutions, large, medium, and small scale solutions, batteries and off grid projects. The headquarters were established in Germany in 1981, but we have sales offices in 21 countries.
Is it important to have a local sales office or a distributor in UK?	It is very important for two reasons. First, it allows for a better understanding for the market and the technical parameters required. In addition, it helps to process the requirements of the customers better, provide better service and support.
Which attribute – price or quality – is more important for the UK customer?	The UK customers are very price sensitive. Even though they clam to want high quality, they usually go for the cheaper option.
If the customers are price sensitive, is there a serious competition from Asian producers as it is in the solar PV modules industry?	In the utility sector we do not have a strong competition from the Asian companies due to the fact that large scale project usually go for the known brands. In residential, the competition exists. However, the quality is not yet at the level of ours, but is increasing rapidly.
The officials in the UK are planning to change the incentive plan to shift from large-scale low carbon energy generation to a smaller-scale. What effect do You think it will have on the market?	The planned change is targeted at the AC installations bigger than 5 MW. I believe that there will be a high decrease in the installations higher than 5 MW, yet we believe to see the increase in the large scale industrial segment.

Respondent	Undisclosed - Representative of British Photovoltaics Association
Question	Answer
Could You please indicate which incentive schemes are the most important?	Currently there are two most prevailing compensation schemes – Renewables Obligation (RO) and Feed-In tariff scheme. RO is for the large-scale low carbon energy production while FITS is oriented to the smaller scale.
What is considered a smaller scale energy generation?	There are two FIT options – FIT for the installations up to 50kW depending on whether the installation is on the ground or mounted on the roof, and ROO-FIT scheme from installations from 50kW to 5MW.
The officials in the UK are planning to change the incentive plan to shift from large-scale low carbon energy generation to a smaller-scale. Why?	The government aims to promote small-scale energy generation due to several reasons. Firstly, the government tends to believe that such measure will have a longer effect since the residential segment tends to choose better quality products with longer life span. In addition, the government is interested in providing incentives to use, not to make profit.
What effect do You think will the change of this policy have on the market growth?	At this point it is difficult to say. However, we can already see the declining rate of growth due to diminishing contribution of large – scale energy generation. Hopefully the industry will remain growing at a healthy rate.
Will the funding be provided to other applications such as Building Integrated Photovoltaics as well?	These applications already fall under the category of FIT scheme, no additional incentive programmes are planned to be introduced in the near future. BIPV is indeed the less developed segment. However in light of Nearly-Zero Energy Buildings it is possible that BIPV will take off soon.

Respondent	Arvydas Kazlauskas – Director at AKV Energy
Question	Answer
Please let me about the activities of AKV Energy.	We have established AKV Energy solely for the implementation of the projects in the UK. We deal primarily with solar and wind energy. Taking into consideration change of policy in Lithuania we had to look for new markets.
Why did You choose the UK market?	The main reasons why the UK market was chosen was the market attractiveness and the language. I believe that the market will continue to grow as the equipment is becoming cheaper and the demand is growing.
Did You face any problems in the market?	We have established AKV Energy in 2011. The beginning was very difficult due to different legal frameworks and different culture. It was difficult in the beginning, but the industry increased significantly during 2013-2014. At first it was very challenging to do business as a foreigner. Now it is easier.
The UK solar PV market has been growing fast during recent years. What do You think caused such growth?	There was virtually no solar industry until the feed-in tariff schemes in 2010, therefore I have to say that it is due to the incentive schemes and the guaranteed fees.
What products do You buy for You solar PV projects?	There is a huge supply for the PV products. Currently all the major suppliers entered the UK. You can choose from the top ten international producers. We use multi crystalline solar PV systems due to their lower price. In addition to that, the technology is more suitable for the ground-mounted installations with direct sunlight. Mono crystalline works better on the roofs with less sunlight.
Which aspects of the products are the most important for You when You choose You supplier?	There are several aspects – efficiency, warranties, producer's brand name in an international market and its position, as much information about the company and the product, and definitely the price.
What is Your opinion on the PV modules produced in China?	The prices for Chinese products are significantly lower. I could only comment on the quality of the products after 5-10 years, now it is difficult to say. Of course, German producers always claim to have the better quality, but I believe that such producers like Jinko, ReneSola are not much worse. Taking into consideration that PV modules account for nearly 50% of total project cost, Chinese PV modules are preferred.
The officials in the UK are planning to change the incentive plan to shift from large-scale low carbon energy generation to a smaller-scale. How will it affect the market?	I believe that the effect will be negative. This most important issue here is that uncertainty on how the new policy will work on the market as well as the stability of it. Income stability which was provided by ROC was among the most important factors for the large scale projects. Many companies will shift to projects under 5 MW, but it is too early to predict whether the growth will be big enough to outweigh the lost share of large scale installations.
What is Your opinion on Building Integrated Photovoltaics? Will this	We do not deal with the BIPV, but to my knowledge, certain regulations regarding this segment are proposed by the EU and the government of the UK that starting from 2016 a certain

segment grow in the future?	amount of integrated solutions must be installed. I believe that BIPV has a huge potential.

Appendix 4. Fees for Microgeneration Certification Scheme

Activity	Fee (VAT Excluded)
Application and first year fees	
Application	550£ per product family
Factory Production Control (1-3 days; travelling time excluded) – evaluation of the manufacturing facility's adherence to the requirements of the MCS	690£ per day All travel and accommodation costs
Technical Evaluation of the products, reports and information provided	900£ for the first product in the family 65£ for additional products in the same family
MCS administration fee	1st Technology Certificated 425£ 2nd Technology Certificated 325£ 3rd Technology Certificated 225£ Thereafter 125£
Annual fees	
Surveillance Visits (1 day, travelling time excluded) – to evaluate if the quality requirements are maintained	690£ per day All travel and accommodation costs
Greenbooklive Listing – includes placement and promotion of the production in www.greenbooklive.com website	350£ for the first product 5£ for additional certified products
Product review in case of any changes to the product	Case by case basis
MCS administration fee	1st Technology Certificated 425£ 2nd Technology Certificated 325£ 3rd Technology Certificated 225£ Thereafter 125£

Source. BRE Global Ltd (2011).

Note. Adapted by author.