

Maximizing the Business Opportunities in the Renewable Energy Industry

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Abstract

As energy transition has become of global importance today, the demand for and supply of Renewable Energy (RE) continues to rise. New job creation can be observed, more competitive green products continue to appear, and the future prospects for renewable energy providers continue to expand. However, although many firms exist in the RE industry today, not many have a full grasp of the methods necessary to maximize the opportunities available to them, and handle rising competition. The main objective of this review is to explore business opportunities in the RE sector and the approach used by top firms in the industry to maximize them. It aims to provide insights into the various competitive business strategies used by these RE firms, their Unique Selling Points (USPs), and key approaches to handling competition. Using the International Energy Agency Statistics and World Bank data on global energy demand/supply, we also analyze renewable energy global demand, and future opportunities available for RE industries. Oftentimes, research on RE focus either on the consumer end or on the technicalities of it. Few consider it from the firm's perspective in terms of providing a path to better business output and surviving fierce competition as this paper does.

Keywords: *Renewable Energy, Business Models, Business Strategy, Competition*

1. Introduction

The issue of how to effectively execute a global and modern energy transition is now of great importance to the academic and policy making communities [1]. The energy transition towards low carbon emissions for many countries has remained a long term strategy especially for China, the United States, and across Europe [2]. Despite the ever-pronounced necessity of a faster energy transition, the global energy transition is moving at a slower pace than is necessitated. Although large-scale investments have been made primarily by China, USA and Europe, evaluating the per unit GDP investments reveals that several developing countries such as: Rwanda, Guinea-Bissau and Solomon Islands etc. are actually investing much more towards the global energy transition [3]. The global average growth rate of modern renewables in the last decade is only +5.4%, indicating that sustainable development goals (SDG) 7 agreed upon in Paris will likely not be met in time [3]. M. Mata Perez et al. [4], in their study of the multi-speed energy transition across Europe found that the deferring progress of the energy transition across the different countries is reflective of their different national energy security interests to promote energy policies. Jungwoo Lee et al. [5], in their study of political systems and global energy transitions, found that energy has always been a major factor that determines political

systems and that there is a hesitancy among democratic countries to make a switch to new forms of energy.

Despite the reluctance in shift towards modern RE by political systems, many private firms in the energy sector have taken it upon themselves as a vision to push towards an energy efficient future. Bryant et al. [6], in their research on the discourses of power in terms of governmental approaches to RE business models found that the increase of renewables are decreasing the viability of energy business models on a global scale. They advise that policy makers must examine the future business model viability of RE firms in order to deliver the appropriate energy transition. With the rise in popularity of RE, there is also an increase in competing firms supplying RE to the public. Across Africa, there is also a rise among RE providers to adopt more innovative business models for RE projects carried out in the region [7]. Herbes et al. [8], in their study on new business models in RE cooperative from the aspect of barriers perceived by the firms members found that significant the need for risk aversion, models that align with the intentions of lawmakers, as well as a general lack of competencies in unsalaried management acted as barriers keeping RE firms from responding to policy changes and adopting newer business models. Engelken et al. [9] In their review of the opportunities, barriers, and drivers of business models in RE industries found that climate change mitigation provides business opportunities for RE firms, the high cost of energy storage acts as a barrier, while cooperation is key if future business models should handle complexities. Bamati et al. [10], in their research on the impact on technology on RE production found that technological factor and GDP were the main driving force for RE use in developed countries. On the other hand, CO₂ emissions and GDP were the main driving force for RE production in developing countries.

Often times, research on RE tend to focus on the complexities and technicalities of supplying RE by types such as solar and wind [11]–[13]. In other cases, the discussion is centered on policy transitions and the importance of a global energy transition [14]–[16]. However, the perspective of the RE suppliers are not often considered. Their business survival strategies in the face of the ever-changing energy policy scene is of great importance. In this research, the unique selling points (USPs), value propositions, and competitive business strategies of top firms in the RE sector is investigated. The global top ten RE firms based on stock performance, number of on-going projects, as well as current production capacity are used as case studies in this research. The findings in this study will provide an insight into how RE firms can continue to survive and stay competitive despite suffering losses due to unforeseen economic circumstances, a fall in public interests, or a wave of unfavorable energy policies in their countries. The rest of this paper will give a detailed summary of the energy demand/supply in the last decade, then analyze the competitive strategies of ten top RE firms. Outstanding points from the review will then be discussed before conclusion and recommendations are proffered.

1.1. The Rising Demand for and Supply of Renewable Energy

Across the globe, with the rise in awareness of climate change, we also find a rise in awareness of the need to transition to cleaner more renewable energy sources. This is evidential from IAE Statistics and World Bank Data showing the falling trend of world electricity production from oil between 1970 and 2015 as seen in figure 1, and the rising trend of world electricity production from renewable energy sources between 1960 and 2015 as seen in figure 2 [17].

In the early 2000s, several policies were instated especially across Europe which made solar energy become more commercially competitive to traditional fossil fuel-based energy sources. Subsidy programs were mostly responsible for encouraging the purchasing of solar panels on such a large scale [18]. This initiative worked not just towards boosting RE production and supply but also Consumption and demand. World Total Primary Energy Supply (TPES) by

source (ktoe) shows an increasing trend with RE sources fitting the same trend from 1990-2017 as seen in figure 3. World RE electricity output also shows a rising trend since its lowest fall in 2003 to being just over 17% of total electricity. However, between 2007 and 2015, there has been a consistent rise from less than 18% to 23% as seen in figure 4.

More interestingly, similar to RE output, the world renewable energy consumption rate is on the rise as well despite the falling trend experienced between 1999 and 2007 from 18% to about 16% as seen in figure 5. Yet, a rising trend can be observed between 2007 and 2015. At the same time, we see in figure 6 a consistently rising trend in world energy use per capita between 1970 and 2014.

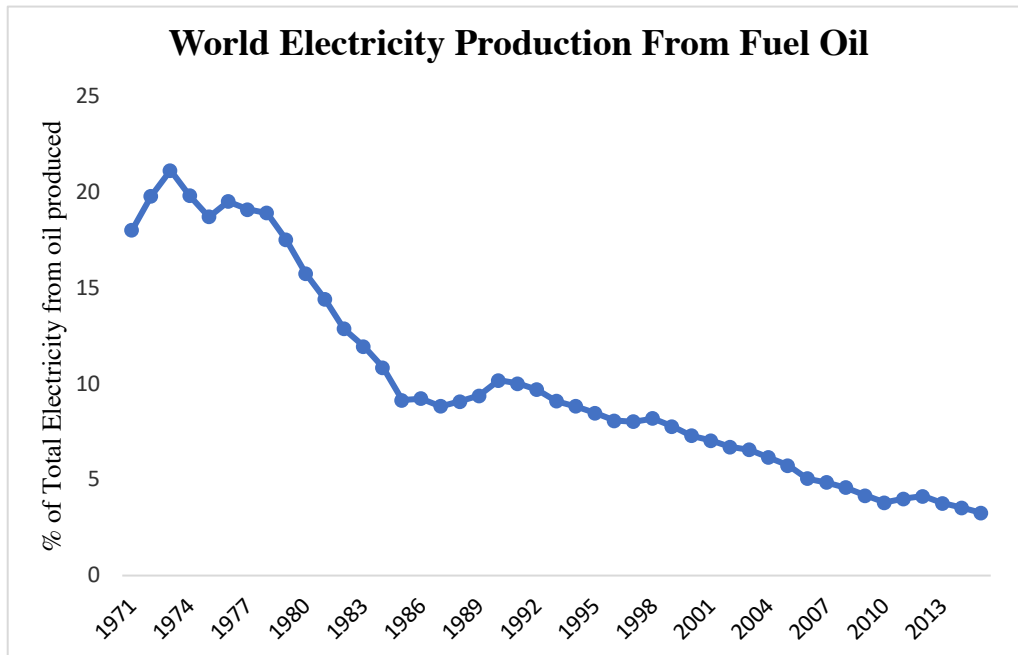


Figure 1. World electricity production from fuel oil from 1960 - 2015 [17]

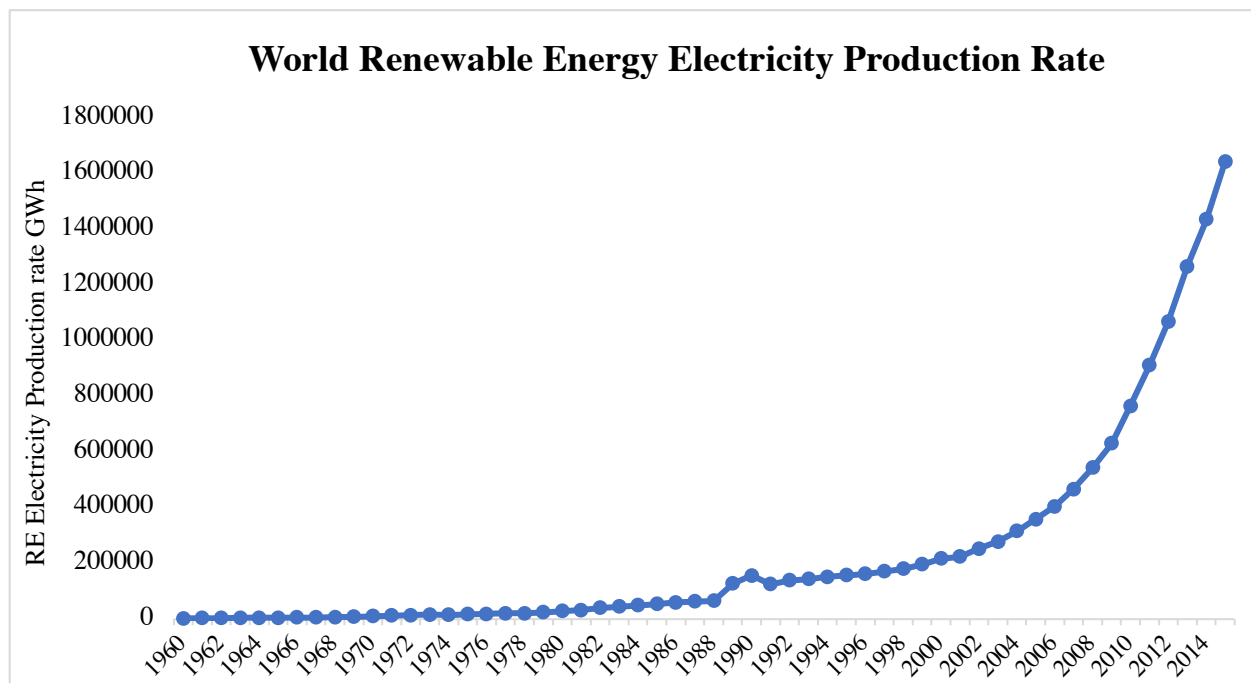


Figure 2: World electricity production from RE sources from 1960 - 2015 [17]

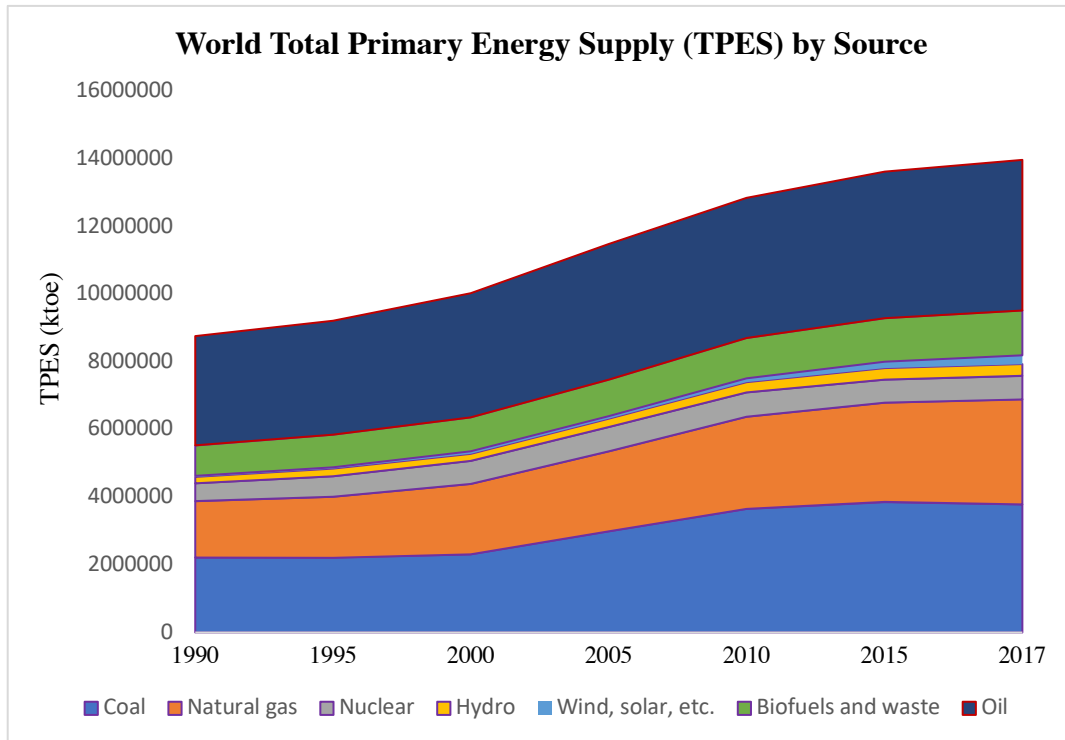


Figure 3. World's total primary energy supply by source from 1960 – 2015 [19]

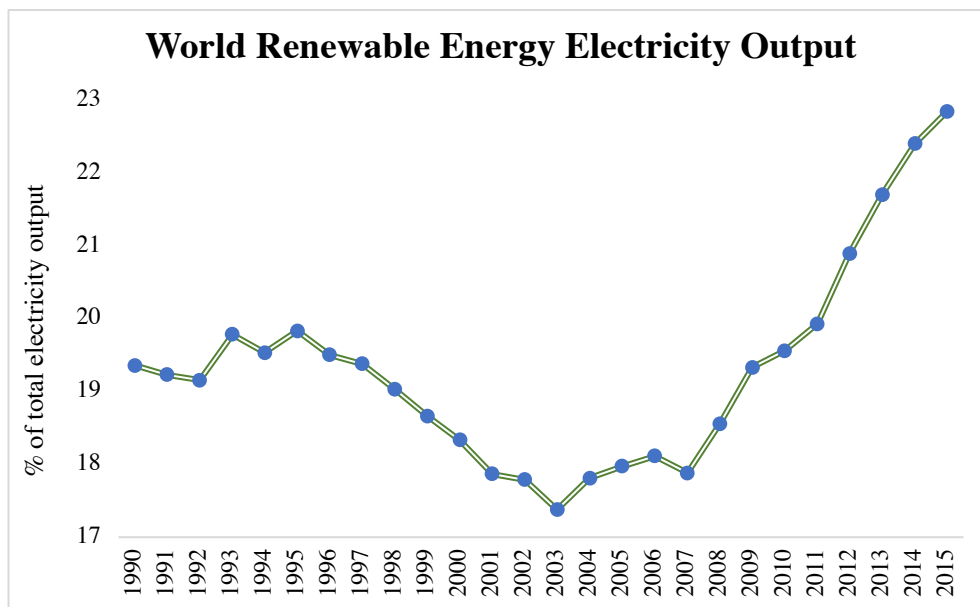


Figure 4. Renewable energy electricity output (% of total electricity output) [17]

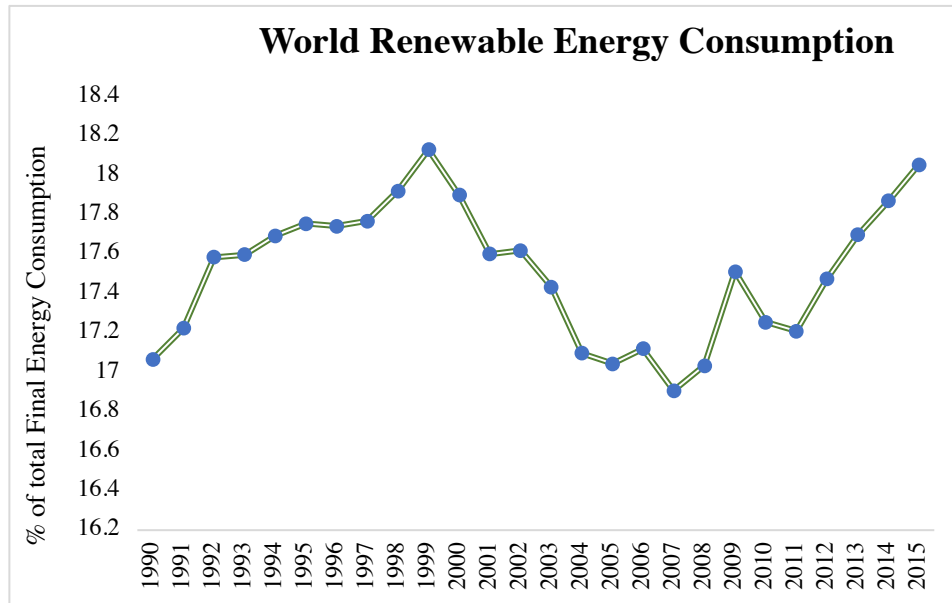


Figure 5. World Renewable Energy Consumption rate (% total of world final energy consumption) [17]

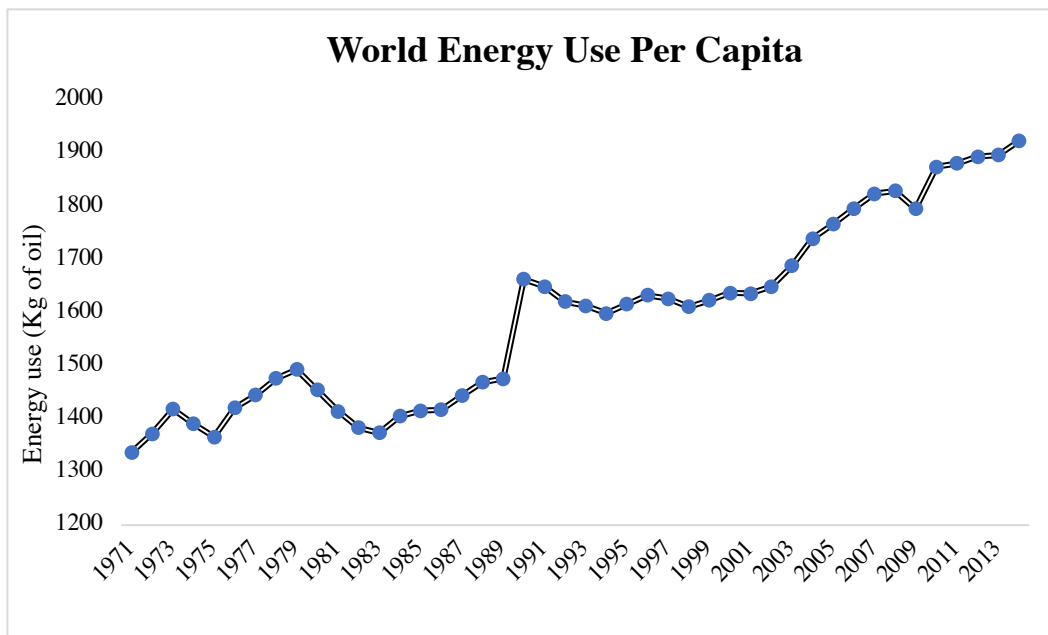


Figure 6. World Energy use per capita (energy use in kg of oil) [17]

1.2. Business Opportunities to be Maximized in the RE industry

As RE becomes more known and government subsidies dedicated to aiding the industry continues to decline, the need to develop and become more competitive alongside other energy industries is on the rise. Simultaneously, several opportunities are showing up for firms and entrepreneurs looking to branch into the RE industry, and profit from it [9]. Some specific areas of the RE industry hold opportunities yet to be exploited. For instance, more efficient solar-

Power cells are constantly on demand. The constant issue for produced cells is often the issue of the degradation of the compounds that absorb the solar energy. Those solar-power cells which are able to maintain their chemical integrity much longer despite heat and other conditions are more in demand than their predecessors. Other RE areas where demand is rising include the increasing demand for carbon storage, and artificial photosynthesis among several others [20]. These are the RE opportunities prevalent where RE technology is already considerably well developed. In other regions where RE technology is not yet fully utilized, we see even greater opportunities, and a high RE potential. Across the ECOWAS countries which consist of 15-member states, most of which are located in western Africa for instance, there remains a high RE growth potential. In fact, there remains a high energy demand as across several areas a lack of adequate electricity remains a major issue. In Nigeria for instance, the solar and hydro energy potential is both high and highly underutilized [21]–[23]. Across the middle east, there is also a rapidly rising consumption rate and demand for RE products in recent decades [24]. The middle east and Africa especially are key regions with limitless potential to produce and sell Renewable energy products as valuable substitutes to the often-inefficient oil-based energy produced.

2. RE Industry Leaders, and Their USPs, and Competitive Strategy

2.1. Key Terminologies and methodology

A Unique Selling Point (USP) in simple terms can be broadly defined and understood as aspects of a business that makes it stand out from the crowd of businesses in the same field and industry. In essence, it refers to that attribute of a business that tells the stakeholders more about what makes a business special. [25] defined USPs as dramatic improvements to the positioning and marketability of a firm and its products. A competitive strategy can simply be defined as the short to long term plan of action a firm develops in order to attain competitive advantage over its competitors. As [26] puts it, competitive strategy is the means by which a firm develops competitive advantage and by so doing earns above-average returns for its stakeholders. In the Renewable energy industry, there are several renown names in the business. Some of the top ones include **First Solar, Canadian Solar, Vestas Wind Systems, NextEra Energy Resources, Tesla, Siemens Gamesa, Suzlon, Brookfield Renewable Partners, Technologies, Siemens, GE Energy, Suzlon, Berkshire Hathaway Energy (BHE), Avangrid Renewables, and Orsted (FKA Dong Energy)** among many other notable players in the industry.

These top players have been chosen based on the successful state of their stocks, the number of projects they are working on, as well as their current production capacity. Other factors such as the easy accessibility in terms of information transparency and availability were also factors used to choose these firms. All of these firms have made their initial Public Offerings and are listed in major stock exchange markets around the globe. These firms are highly profitable and thriving due not just to their first mover's advantages in some instances, but also due to their successful business approaches and models. We will now take a deeper look into these top firms.

2.2. Case 1: First Solar

First solar as of the third-quarter of 2019 boasts holding the crown for being the largest photovoltaic (PV) solar panel manufacturer in the United States of America. First Solar stated a 2019 third-quarter net income of \$30.6 million from a revenue of \$547 million compared to a loss of \$18 million in the prior quarter. This level of profitability has not always been the case

for the RE giant as it has suffered periods of challenges and losses, and have constantly had to towards sustainable growth.

2.2.1. USP and Value Proposition

First Solar at its origins worked towards breaking the clear-cut boundaries in the RE sphere. While other RE providers were battling cutting the disadvantageous installation costs for consumers, First solar was the very first to be able to generate power at below \$1.00 per watt as found in their annual report [27] showing the success of their cost effectiveness strategy. Beyond offering its RE products at affordable rates, First Solar on its Series 6 modules, boasts of the products ability to significantly deliver much more usable energy per nameplate watt compared to other suppliers of the same type of product. In fact, First Solar boasts having the smallest carbon footprint, the lowest life cycle water use, and the fastest energy payback in the RE industry [28].

2.2.2. First Solar's Competitive Strategy

Between 2007 and 2011, first solar began the initiative to expand by starting manufacturing plants in Vietnam and Malaysia. Following the great recession and the wave of austerity policies within this period, First Solar suffered losses from a major fall in demand of RE products, most especially its solar panels. At the same time, First Solar experienced an increase in operating income from \$137 million to around \$750 million. [29]. Despite facing this period of loss, First Solar continued to invest in value and within two years was able to avoid falling into bankruptcy, and also improve sales and revenue by 2015. Their main short-term strategy was to cut back on their initial plan of expansion to reduce costs. They utilized a survival approach. First Solar also recognized that their overdependence on the European market subsidies was not a sustainable approach. As such, on the longer term, they needed to explore other markets they could supply solar energy to. The goal was to reduce the impact of policy fluctuations on sales and revenues. They looked beyond the European and American markets, and began marketing to middle east and northern African countries. In terms of their organizational strategy, First Solar has maintained a centralized and hierarchal structure [18]. One main competitive strategy First solar utilizes is maintaining its top position in several aspects. These include marketing itself as truly having the lowest carbon footprint, lowest life cycle water use, and the fastest energy payback in the RE industry (First Solar Inc., 2019). These USP claims have worked to make it one of the most sort after suppliers of RE products around the globe. Besides this, first solar places emphasis on maintaining sustainability through innovation and using vertical integration as a means of realizing opportunities and strengthening capabilities over the years [31].

2.3. Case 2: Canadian Solar

Canadian Solar by the end of 2019 is among the top three largest solar companies in the world in terms of its revenues. They employ as much as 13000 people and are based and running major solar projects in 19 countries on 6 continents. The company has shipped over 38GW photovoltaic modules over its 18 yearlong, and has made as much as \$3.74 billion in revenues [32].

2.3.1. USP and Value Proposition

Similar to Case 1, Canadian Solar markets itself as being able to provide high value per product. However, it also markets itself as being truly global and international with emphasis on the

various projects it has running on different countries. Having state of the art manufacturing technology, and constantly improving quality is another major point. Besides these, Canadian Solar's overall trend of profitability is indeed a selling point to potential investors. It boasts of its dedication to changing the lives of its customers whatever the size of investment a customer goes for. Canadian Solar also boasts the ownership of over 1400 patents worldwide.

2.3.2. Canadian Solar's Competitive Strategy

Canadian solar utilizes a model of delivering top quality products and services to its customers no matter the size of the investment they choose to make. Offering a 25 year long warranty of confidence. In essence, Canadian Solar's main competitive strategy is derived from its strategic positioning in the downstream market. Canadian solar has Another major competitive strategy is found in Canadian Solar's advanced technology and product variety [33]. Its offering of specialty modules such as the Onyx series which deliver even higher performance and cell efficiency remain second to none in the RE industry. One other notably competitive tool Canadian Solar utilizes is its approach to human resources management. Respecting all cultures and recognizing the strength in a diverse and truly global workforce [32].

2.4. Case 3: Vestas Wind Systems

One major aspect that instantly sets Vestas Wind Systems apart from its competitors is its age. The company has been running since 1898, and is headquartered in Denmark. Compared to case 1 and 2, it sells wind turbines and has the largest market share in the field of wind based energy boasting a total installed base of over 108GW, and a worldwide installed capacity of over 591 GW.

2.4.1. USP and Value Proposition

Vestas Wind Systems has several strong selling points compared to other firms in the industry. it's first major selling point is the fact that the firm has been running since 1989 despite the just now rising demand for RE technology and products. In essence, the company boasts moving towards its vision through the last three decades. It's second USP is it's installed base. Boasting as much as 18% of the globes installed base, over 90GW of the total combined capacity under service, as well as the over 591GW of the worlds installed wind capacity [34].

2.4.2. Vestas Wind Systems' Competitive Strategy

One of Vestas Wind Systems' main competitive strategy is in its service offerings. It offers a competitive range of flexible maintenance offerings from services on low scopes to wall to wall programs. It also offers several advanced guarantees to its customers. Vestas Wind Systems boasts having over 43,000 turbines in service and over 8000 service technicians scattered across 67 different countries. The firms age, service offerings and other aforementioned USPs work towards developing customer and loyalty and trust in the products and company. It's profitability and continued future prospects especially in terms of its expanding installed base makes it a promising firm for potential investors as well. In essence, Vestas' overall main competitive strategy is found in its ability to retain a long-term relationship with its customers. It takes over maintenance, and is always available with all necessary technology as and when required. This fierce approach ensures that its installed bases are not easily uprooted or replaceable by other wind technology suppliers.

2.5. Case 4: Next Era Energy (NEE)

NEE is an electric power and energy infrastructure company. NEE instantly sets itself apart by its name, mission, and vision. Their theme ‘This is our era’TM instantly sells itself to stakeholders.

2.5.1. USP and Value Proposition

NEE markets itself as America’s largest investor in new infrastructure. It also boasts being among the top 25 companies in the world for innovativeness as well as having a staggering 770% total shareholder return over the course of 15 years. Even more pronounced is its dedication to providing high paying jobs through their largescale investments. Besides all this, it boast a long and rich history of many landmark achievements since 1925 when it started [35].

2.5.2. Next Era Energy’s Competitive Strategy

NEE’s strategy is in some sense quite traditional. They focus on following existing and successful business approaches to deliver good future performances. In order to remain relevant and overwhelm competition, they place great emphasis on delivering operational excellence, making strategic longer-term investments that pay back greatly, as well as offering high value products to all customers. NEE’s business strength is found in its infrastructural and clean energy investments as well as its successful track record. It also dedicates resources into innovation and sees innovation as a key to growth and sustainability these characteristics keep them relevant through the era, and build stakeholders trust.

2.6. Case 5: Tesla

Tesla is one of the most globally renowned companies. This is because its mission is to speed up the world’s transition towards sustainable energy. Tesla is also one of the world’s largest suppliers of electric vehicles. Just like case 4, Tesla does not only deal in RE products. However, it also generates clean energy and storage products among its offerings [36].

2.6.1. USP and Value Proposition

Tesla’s unshaken dedication and mission towards achieving total global energy transition certainly sets it apart from its competitors. Although other firms boast of the same thing, Tesla’s CEO Elon Musk has a role to play in the believability of this mission statement as his popularity has risen through time based on his company’s ability to deliver claims made. Besides this unique selling point, Tesla aims to market the a package of products rather than selling one thing or the other. In essence, they offer customers a full spectrum of products designed for greener living, and easy energy transition. The diverse models and designs of their products also make them affordable to various economic class groups.

2.6.2. Tesla’s Competitive Strategy

Tesla uses a somewhat generic competitive strategy. They employ the strategy of broad differentiation. In essence, they work towards being different from their competitors product by product, service by service. Tesla focuses on making use of advanced technology as a means to beating out competition. Tesla also uses the Market penetration growth strategy which entails increasing sales in the market where it currently operates through aggressive marketing. To some extent, the undeniable success of these strategies has led Tesla to be labelled more as an oligopoly which leaves little to no room for new entrants [37].

2.7. Case 6: Siemens Gamesa (SG)

Siemens Gamesa is merger between the Spanish wind energy firm Gamesa and the German manufacturing firm Siemens. SG is an RE company that boasts of being the global leader in wind energy technology, design and manufacturing. It boasts of a global reach and a position that allows it to shape the energy landscape for the future.

2.7.4. USP and Value Proposition

Siemens Gamesa sells itself as a provider of more reliable, more affordable, and much cleaner wind power. Their level of business diversification in the wind energy field is second to none. Siemens Gamesa is also dedicated to climate change and a greener footprint. This sets them apart greatly as their mission and focus is to aid the resolution of the climate apartheid. Environmental protection as a fundamental part of their organizational culture sells Siemens to all stakeholders instantly and sets it apart from competitors whose selling point is not directly centered around solving climate change itself. SG markets itself as being able to actively reduce CO₂ emissions by as much as 19 million metric tons as of 2018 based on its ne wind power installed capacity alone.

2.7.5. Siemens Gamesa's Competitive Strategy

SG state that one of their main competitive advantages is the fact that they have successfully become engaged in all the three areas of wind power business namely onshore, offshore, and in the aspect of service. In essence, no other company matches this level of business diversification. In essence, their strategy is to have a broad reach across the entire field of wind energy [38]. One other major aspect that gives SG a competitive edge is the fact that the firm is a merger between two originally giant businesses. This synergy has made Siemens Gamesa a giant competitor in the wind energy sphere in just a few short years. With the L3AD2020 strategic growth plan, SG hopes to achieve up to 2 billion euros in savings, and attain global leadership. This growth plan is driven by a focus on change management and people culture while costs savings will be focused on enhancing its industrial footprint [39].

2.8. Case 7: Suzlon

Suzlon is an Indian based RE firm that boasts being the number one firm in India's Renewable Sector, having an installed capacity of over 18000 MW as well as over 1800 customers globally.

2.8.1. USP and Value Proposition

Suzlon markets itself as being a pioneer for a greener tomorrow. It also boasts the ability to provide a 360-degree complete solutions package to its customers that ranges over the whole spectrum of projects in wind energy. It also claims the number one spot as India's largest RE firm. Their focus on creativity, innovation and nurturing is indeed unique in a way to other competitors especially in the Indian market. Having over two decades of wind energy experience sets it apart in the region and in the field of wind energy. Suzlon's focus on quantifying their progress in easy to digest forms is also an interesting USP. For instance, Suzlon equates its wind energy installations to being similar to planting 3 billion trees, or removing 6 million cars from the roads, or even powering as many as 200 million computers all of which are more understandable figures of its environmental impact and contributions for stakeholders to easily digest.

2.8.2. Suzlon's Competitive Strategy

Suzlon offers end to end solutions in all of its RE projects. In essence, it has a presence in every aspect of each wind project. From the initial steps of each project to the installation, to the management and then the maintenance. Suzlon makes sure that the wind turbine generators (WTG) perform optimally at all times to provide the maximum plant load factor possible which generates higher returns on investment for consumers. Its one stop solution/ 360 degrees solutions package strategy leaves almost no room for competitors, especially those in the region to surpass it in terms of complete customer engagement, and market share [40].

2.9. Case 8: Berkshire Hathaway Energy (BHE)

BHE is a big RE centered firm focused on sustainability. BHE is essentially a holding company and is a part of the parent company to several other firms such as MidAmerican and PacifiCorp among several others and has among its list of shareholders Warren Buffet also often referred to as the ‘father of investment’. The firm through its subsidiaries produces energy from several sources including wind, solar, hydroelectricity, natural gas and steam among others [41]. It boasts financial results as of 2019 of \$19.8 billion in operating revenue, \$92.2 billion worth of total assets, as much as 383 projects, and a capacity of over 32,113.31 MW.

2.9.1. USP and Value Proposition

BHE has the unique selling point of being a part of a big body of successful companies. In essence, its image benefits greatly from all the various attribute brought together from other companies aligned with its parent company, and its history. BHE is dedicated to strength, offering solutions, and sustainability. It markets itself as being focused on delivering end to end services, high quality customer service, high employee commitment, as well as high environmental respect. Its unique leadership structure that combines members from the various business levels all sharing these same culture and core principles sets it apart from its competitors.

2.9.2. BHE’s Competitive Strategy

BHE like other cases also strive to offer an end to end solution to its customers. Its dedication to truly delivering high quality service on every level and to every customer gives it an edge and builds customer loyalty. Their strategy is mainly to take care of all their existing businesses and assets while investing in opportunities that drive internal growth, and acquitting other firms that will add value to their business. This strategy of acquisition is one that sets it apart from other competitors as BHE expands not just in terms of exploiting new business opportunities, but also in terms of acquiring expertise on every aspect of the RE and Energy sector. They clearly state that their financial strength is gotten from being excellent stewards of all their financial resources, and being backed by Berkshire Hathaway invest into hard assets whose purpose as well as on long term opportunities which produces future strength for the company on a long term [42].

2.10. Case 9: Avangrid Renewables

Avangrid is a fairly young company which was formed in 2015 due to the merging of Iberdrola USA and UIL Holdings. The company is listed on the New York Stock Exchange, and has operations and assets upwards of \$32 billion. The company just like case 5, is dedicated to facilitating the world’s energy transition, and running as much as 60 RE projects, with over 14,000 MW of RE and having a capacity of 31, 399.72 MW.

2.10.1. USP and Value Proposition

Avangrid sells itself around the following words; reliability, commitment, expertise, and being trustworthy. The company markets itself as an empathetic friend. A style that makes the consumers feel that the company truly cares about all of their concerns and is a reliable professional solution to their energy needs. This aspect to some extent indeed sets them apart from their competitors in the RE industry.

2.10.2. Avangrid Competitive Strategy

Avangrid is capitalizing on the rising demand for clean energy. It is maximizing opportunities across various regions. Meeting the clean energy demand in New England, and maximizing the hydropower resources available in Quebec Canada. Avangrid has also launched several pilot programs to evaluate the way energy systems can offset the load during peak times. Its aim is to provide safe and highly reliable services to its consumers while putting into account all forms of hazardous environmental scenarios. In essence, with the use of advanced technology, and with focus on research and development they aim to provide superior quality and services that has the ability to beat out competition [43].

2.11. Case 10: Orsted (FKA DONG Energy)

Orsted (formerly known as Dong Energy) Is a full-value chain RE firm based in Denmark with a current share price of 674.80 DKK. It has as many as 118 projects on ground, and has a capacity of 36,537.70 MW. Its value chain consists of wind farms, power plants, oil and gas exploration, as well as heat and electricity sales. Over the years, Orsted has consistently worked towards shifting its focus from the sourcing, wholesale, and exploration of natural gas and oil production to becoming a company centered around the importance of green energy [44].

2.11.1. USP and Value Proposition

Orsted's 'act now' campaign is gaining ground and popularity and attracting attention. Orsted itself is a company who was originally centered around the provision of non-renewable energy, and is now transforming its company's image, resources, culture, and attitude towards RE energy sourcing and provision. By this, it even earned itself the award of 'Master of Reinvention' at the Real Innovation awards held in 2017[45]. Rather than market itself as a seller of green energy, it rather puts emphasis on climate change, and the short time span of a decade in which time the world at large must halve carbon emissions. They also market green energy not just as the better alternative, but also as a cheaper one. In essence, their campaign directly works towards calling attention to the real climate change problem while stirring in potential consumers the need for RE demand.

2.11.2. Orsted's Competitive Strategy

Orsted has a classic approach to competition. It has its detailed plans, objectives, and strategic goals to meet all ranging from short to long term plans with results reported quarterly [46]. One major competitive advantage the Denmark firm is its approach towards making green energy affordable. Being a full value-chain company and handling all things energy right from the sourcing, to production, to installation, and sales, and everything in-between, Orsted is ensures it is involved in it all. it is also highly experienced in energy as a whole and has this as a competitive advantage over other firms that may be newer to the business of energy as a whole. Orsted is also highly focused on the utilization of advanced mechanisms and technology in every aspect of its value chain. Another notable difference and aspect where Orsted stands out is in its

online self-presentation. Their website is well designed, easy to navigate, and their objectives are easy to comprehend. They even go as far as to seek inputs from their site visitors on ways to improve their presentation. They collect data on the various reasons why visitors have visited their site, and the kinds of visitors from researchers, to customers, to investors. All these works to make it one of the most adaptive to change, and most knowledgeable firms in the energy sector at large [47].

3. Recommendations for Other RE firms

Upon analyzing these ten case studies, several trends can be recognized which can point upcoming or struggling firms in the right direction. First, there is a need to discover and or develop one’s USP as a firm. In essence, if you cannot find your selling point, you need to invest in developing a unique selling point. Consumers and investors often refer first to a company’s USP before engaging into it. In essence, being a firm delivering RE is no longer a sufficient and compelling enough USP as even in the RE industry, many firms are rising and making RE industry competitive, and RE products comparable. As seen from the top ten RE firms analyzed, boasting a global workforce, high quality service delivery, and or cost advantage are good first points for marketing a firm over others. Another key and recurrent point of marketing is found in the fact that climate change mitigation agenda provides a platform of countless opportunities that RE firms can work towards maximizing. For those firms that are not yet large, it becomes more important to invest into the development of a timeless and powerful USP and iron clad value proposition which will act as the first line for successful marketing, as well as one that adds positively to the image of the firm. This makes stakeholders unable to easily search for alternatives as the firm seems to hold the solution to all their energy needs. Thirdly, due to the fact that RE products are now approaching commodity status, there is a need for RE firms to begin employing competitive business models as seen across other commodities. In essence, some popular models include cost effectiveness, and cost advantage for consumers like First Solar boasts. Another model is quality, and cutting-edge technology such as Canadian Solar and Vestas boasts. Even more aggressive is the approach to increasing and maintaining installed base which Vestas Wind System employs which undoubtedly sets them apart and beats competition.

4. Conclusion

Table 1 below shows a compiled summary of the key aspects of Case 1-10 in terms of their USPs, value proposition, and Competitive strategies.

Table 1: Case 1-10 Competitive Strategy Summary

Case	Firm	USPs and Value Proposition	Competitive Strategy
1	First Solar	Ability to provide high quality at an affordable rate. First to generate power at below \$1.00 per watt	Main strategies centered around reducing the impact of policy fluctuations. Implementing a short-term strategy of cutting back on expansion, and re-strategizing towards global market penetration on the longer term.

2	Canadian Solar	Ability to provide high value per product. Globalization and internationalization of projects. Usage of state-of-the-art technology throughout its value chain.	A strategy centered around top-quality service at every level of demand with the help of high-level technology. Investment into R&D. Strategies that help them gain solid market share by diversifying their reach into the high margin downstream business.
3	Vestas Wind Systems	A long history of dedication towards green energy transition. Having a large installed base.	Main competitive strategy is in its service and maintenance offerings. Its strategies are driven towards the acquisition of large installed bases, and in maintaining a long-term relationship with all stakeholders.
4	Next Era Energy (NEE)	NEE markets itself as America's largest investor in new infrastructure. It also to providing high paying jobs through their largescale investments	More traditional strategy. Focus is on following existing and successful business approaches to deliver good future performances. They place great emphasis on delivering operational excellence, making strategic longer-term investments that pay back greatly, as well as offering high value products to all customers.
5	Tesla	Fully dedicated towards the achievement of total global energy transition. Among the world's largest supplier of electric cars. Offering full green living package to customers.	They employ the strategy of broad differentiation. In essence, they work towards being different from their competitor's product by product, service by service. The use of aggressive marketing towards broader market penetration.
6	Siemens Gamesa (SG)	Sells itself as a provider of more reliable, more affordable, and much cleaner wind power. dedicated to climate change and a greener footprint. Focus is on solving climate apartheid.	They have successfully become engaged in all the three areas of wind power business namely onshore, offshore, and in the aspect of service. Being a merger company between Siemens and Gamesa allows it to enjoy the synergy effect of expertise from being made up of these two already successful firms.
7	Suzlon	Markets itself as being a pioneer for a greener tomorrow. It also boasts the ability to provide a 360-dgree complete solutions package to its customers. Plus a focus on creativity, innovation, and being nurturing.	Offers end to end solutions in all of its RE projects thus, having a presence in every aspect of each wind project. Suzlon's focus is on making sure that the wind turbine generators (WTG) perform optimally at all times to provide the maximum plant load factor possible which generates higher returns on investment for consumers.
8	Berkshire Hathaway Energy (BHE)	BHE's image benefits greatly from all the various attribute brought together from other companies aligned with its parent company, and from its history. BHE is dedicated to strength, offering solutions, and sustainability.	BHE strives to offer an end to end solution to its customers. Its dedication to truly delivering high quality service gives it an edge and produces higher levels of customer loyalty. Their strategy is mainly to take care of all their existing businesses and assets while investing in opportunities that drive internal growth, and acquitting other firms that will add value to their business.

9	Avangrid Renewables	Avangrid sells itself around the following words; reliability, commitment, expertise, and being trustworthy. The company markets itself as an empathetic friend.	Avangrid is capitalizing on the rising demand for clean energy. It is focused on fully meeting the clean energy demand in New England, and maximizing the hydropower resources available in Quebec Canada. Its aim is to provide safe and highly reliable services to its consumers while putting into account all forms of hazardous environmental scenarios using advanced technology.
10	Orsted (FKA DONG Energy)	Orsted' 'act now' campaign is gaining global popularity. Earned itself the award of 'Master of Reinvention' at the Real Innovation awards held in 2017. This throws light on their ability to adapt to changing environments, reinvent themselves, and deliver results.	It has its detailed plans, objectives, and strategic goals to meet all ranging from short to long term plans with results reported quarterly. Dedicated to providing high quality and affordable green products in the region. Highly experienced and knowledgeable in the energy field. Dedicated to the utilization of advanced mechanisms and technology in every aspect of its value chain.

The need for global energy transition undeniably remains a significant topic of interest to academic and policy making communities. The consumption of RE and demand for RE and Energy at large continues to rise. With heightened global awareness of climate change and the impacts of climate change, the movement towards greener energy has seen a boost. Non-renewable sources of energy have begun to see a gradual decline in consumption. This situation though gradually detrimental to some non-renewable energy-based firms, opens up doors of opportunities for all firms in the RE industry, and for entrepreneurs looking to join the industry. nevertheless, many such firms are now in a time where global subsidies on RE energy is falling, and RE products are fast gaining the status of commodity. The pace at which this energy transition is being met is slower than originally anticipated. RE firms despite being faced with an ever-evolving policy environment continue to produce RE products approaching commodity status. This entails that RE firms not backed by favorable government policies must adopt competitive strategies by which to survive in the industry. They must capitalize on their value propositions, and USPs in order to be memorable to stakeholders. This therefore presents RE suppliers with either the option of remaining competitive in the short and long term, or running bankrupt due to the fierce competition scene in the RE industry today. Looking at the business and marketing strategies of these ten top firms in the RE industry, we see how their unique selling points are utilized not just as means to build customer trust, but as a first line of marketing themselves both to potential customers and investors. We therefore advice firms in the industry looking to survive competition, and thrive in the long terms to focus on building their USP as part of their strategies, as well as to transition their minds towards utilizing several standard but effective business strategies used by other commodity suppliers such as cost effectiveness, or high quality value propositions.

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