Industry Outlook

Energy

ITIC

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Summary

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The energy industry comprises companies that produce or supply energy. This is a very important industry since it provides the energy that other industries need to operate. This industry can be divided into two big segments, depending on the source of the energy that is used for the production: non-renewable and renewable.

On one hand, the non-renewable segment is related to the production and supply of fossil fuels, such as oil, natural gas, and nuclear. Some of the most common businesses in this segment are related to oil and gas drilling, pipeline, refining, and mining. On the other hand, renewable energy comprises energies such as biofuels and wind, solar, and hydropower. Energy generated by renewable power represents only 13.4% of all energy generation, but this is a number that has been increasing yearly in the last decade.

The companies in this industry are affected by the prices of energy commodities, such as oil and gas. For example, when oil prices increase, producers tend to increase their supply. However, refiners prefer when oil prices decrease since it decreases their costs. It is important to note that, because of this, this industry is very sensitive to political events since throughout history it was possible to see enormous fluctuations in the oil price due to these events. One example of this was the Gulf War, where prices rose from $34 to $77 per barrel.

One last important thing to note is the rise in the efforts made to protect the environment and create a more sustainable and clean economy. Due to this, the non-renewable sector can suffer a decline in its activity, since it is the most polluting industry, known for several accidents that caused devastation in its surroundings. But it is a great opportunity for the renewable energy sector since it offers a cleaner and less pollutant form of energy, commonly known as green energy.

Environmental Analysis

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Political

The Energy Industry Political opinion is going through a transformation phase, as people start to worry more about climate change and Politicians and Governments focus more on it.

Regarding Europe, there is currently in place the European Green Deal, which is a political movement to become a climate-neutral continent. This pushes the Energy Industry to act on the transition to Renewable Energy, by imposing strict rules, that become stricter as time goes by, to allow a smooth transition.

As for the USA, there is currently in place the Green New Deal, which is a political movement that also thrives for becoming a less pollutant/climate-neutral country.

Many countries also subsidize Renewable Energy private acts, like buying an Electric Car or Solar Panels, among many other subsidies.

Economical

Just like it said previously, the Renewable Energy section has subsidies, which include lower taxes. This is one of the ways found by governments to increase the investment in Renewable Energies. Another economical advantage these companies face is having the opportunity to use public funds for R&D and even for some public projects. At the same time, interest rates are low, which is good for companies that need to borrow money. There is also the rising demand for energy and renewable energy products, which also contributes to increasing the Revenue.

However, a big part of the Energy Industry is made of companies that explore Non-renewable Energy. These companies are being very affected by all the measurements taken by most developed countries. Because of that, some of them are trying to also go after this recent Renewable Energy section.

Social

Due to COVID-19, lockdowns are/were in place in many places, while working and classes from home have become the norm. With this, the demand for individual electricity increases, while the demand for electricity by companies decreased since offices and workplaces are closed.

On another subject, the number of middle-income households in under-developed countries is growing (e.g. China, India), while the number of people in upper-income households in developed countries is growing. With both facts in mind, particularly the first, it is expected for the common household to increase its electrical consumption in the near future.

Technological

The Energy Industry transformation from non-renewable to renewable is supported by a massive technological revolution.

One of the biggest changes was the $/watt. The average 6kWh residential solar system, which would cost around $40k in 2010/2011. Now, at only $2.5 per watt, a 6 kWh would cost around $15k, which is less than half of what it was a decade ago.

Another area where tech development has upgraded the energy industry is on batteries, which used to cost more than $1.1 thousand per kWh back in 2010, while in 2020, for the first time, it has reached below $100 for the same power capacity.

Legal

Like all other industries, the Energy Industry needs to follow the laws and regulations. Today's problems fit the fast-paced market environment that most industries are in. With the market being fast-paced and politics still having slow methods of implementing laws and regulations, sometimes industries enter non-regulated areas.

One part of the Energy Industry that is being very affected by regulations is the non-renewable sector. This being because of rules imposed to lower greenhouse emissions.

The opposite is also true, with the renewable sector being constantly helped by new regulations that, by affecting the non-renewable sector, increase the first's revenue.

Environmental

As previously discussed, the Environmental Impact of the Energy Industry is considerably high. Being the second-highest greenhouse gas source, with 28%, the production of Electricity is one of the main causes of climate change. However, the other 72% is majorly caused by Energy production through other means (e.g. Car Engines, Plane Engines), with the only way to solve this being through increased renewable energy production supporting other industries and services, by, for example, swapping ICE engines to Electric Engines that depend on an Electric infrastructure that is still lacking or by producing enough renewable energy to feed other industries.

Industry Competitiveness

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Porter's 5 Forces

The Threat of New Entrants

- **Low competitive force**
- Upon entering this market, it is required that companies have a huge start-up capital in order to survive. This industry is very capital-intensive and demands making investments in things such as research and development, Property, Plant, Equipment, repairments. Also, governments around the world often require that companies operating in this industry follow environmental regulations which usually causes companies to acquire specific expensive capital to comply, already weaving out smaller companies. This makes it very difficult for most new entrants to pass this barrier to entry and compete against well-established companies.

Competitive Rivalry

- **Strong competitive force**
- The energy market is highly competitive considering that it is generally fragmented with a diversity of several global and regional companies. However, with not much product and service differentiation, most companies in this market mainly compete by stealing customers and providing cheaper price options. Due to this rivalry, it is difficult for many companies to maintain good profit margins as they compete with other companies in pricing, and government regulations also;
- Even though competition is found in this market, it is also important to note that natural monopolies in certain countries can occur due to the high start-up costs. With that, competition in the industry will be low compared to fragmented markets in other places

Bargaining Power of Buyers

Low Bargaining Power

- Consumers in this market have low bargaining power since the prices provided by companies usually reflect the general market price of the commodity which is not controlled by the company, Therefore, in this industry buyers often must pay the price that is being presented since there is little that can be done. An example of this can be seen with crude oil. If the price changes, it typically changes on a global scale.

Bargaining Power of Suppliers

- **Moderate bargaining power**
- Suppliers in the industry can range from companies that extract natural resources such as coal and crude oil to companies that supply electricity and power. These suppliers have moderate power since consumers are dependent on these types of resources and because the number of consumers demanding these resources is small when compared to the suppliers.

Threat of Substitute

- **Low threat of substitute**
- There is a low threat of substitute products since there is not much differentiation in the product/service from company to company. Although, because there are many different companies that can provide the same products/services in this industry, consumers can switch to different companies at ease and generally without any switching costs.

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SWOT Analysis

From a legacy energy company perspective:

Strengths S1 – An Essential Sector S2 – Highly Developed Infrastructure	**Weaknesses** W1 – Highly Polluting W2 – Dependent on fossil fuels W3 – Large Dependence on Imports W4 – High Prices for Renewables
Opportunities O1 – Development of new technology for Sustainable Energy O2 – Large investment in Renewables O3 – Government Subsidizing O4 – High Public Interest in Renewables O5 – Growing Need for Electricity	**Threats** T1 – Climate Change T2 – Low social acceptance for polluting energy T3 – Lower Investment into the non-renewable sector T4 – New sustainability laws

Cross-SWOT:

O1:W1 – The recent development in technology allows for better and more sustainable ways to produce energy. The technology is becoming more efficient as well as cheaper making it easier to become economically viable.

O2:W3 – A large development, as well as large investment into sustainable energy, has created smaller dependence on exports. This is especially great for countries that do not have large natural reserves of fossil fuels.

O3:W4 – High price of new infrastructure, as well as relatively lower production, can make the technology difficult to implement. Yet governments around the world have been subsidizing the sector, helping it become economically viable.

S2:T3 – Well-developed infrastructure allows for more traditional energy companies to sustain their production despite the lower and lower investment. This also means more opportunities to reinvest capital into greener fields.

S2:T2 – Low acceptance of polluting energy is somewhat offset by the large existing infrastructure and yet soon this will need to change, and it is likely to stop being a strength. This will, and already is, forcing most legacy businesses to transfer into renewable energy.

From a renewable energy perspective:

Strengths S1 – High levels of investment S2 – Very sustainable S3 – Less dependent on imports	Weaknesses W1 – Low infrastructure development W2 – Low technological development W3 – Difficulty in storing produced energy
Opportunities O1 – High public interest	Threats T1 – Small incentives

O2 – Government Subsidizing O3 – Higher demand for electricity	T2 – High barriers for entry T3 – Economically unsustainable

Cross-SWOT:

O3: S1 – Higher levels of investment can accommodate the increasing electricity demand. Currently, the world is going through a major shift not only in transportation but also in a much faster internet (5G). This will require a much larger use of electricity and thus increase demand over the transition period.

S1: T3 – While currently, almost all renewable energy is not economically viable due to poor economics and high infrastructure costs, a large investment that has been made over the last few years and that is likely to continue to happen more and more into this niche of the market are going to be the catalyst that will make renewable energy economically viable.

W2: O1 – While the technology is far from the most efficient, high public interest has made it a priority to find more effective ways to make, store and distribute power. The energy sector has had a large jump in technology development and is likely to keep taking advantage of this opportunity.

W1:O2 – Low infrastructure development is one of the main issues for renewable energy. While most believe that public investment should be responsible for the development of such infrastructure, the truth is that it is not enough. Thus, government subsidies are an essential element for the future success of the industry.

The Big Players

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Enphase Energy, Inc.

Description

Enphase Energy, Inc. (ENPH) is an American company, founded in 2006, that operates in the energy industry. Enphase Energy is listed on NASDAQ, since 2012, with a current market cap of $22.124B. Enphase Energy focuses on creating smarter, simpler, and more affordable energy solutions, based on solar energy. It also values its consumers and tries to offer the best services and quality, testing the products for 1 million hours before launching them. The company's products work with solar energy, which goes hand in hand with their commitment to preserve the earth's resources and maintain a sustainable and socially responsible business.

This is a very big company that has more than 800 employees working in 21 different countries, having already issued more than 300 patents.

Strategy

Enphase Energy is mainly known for its solar microinverter, having already shipped more than 32 million units, which places the company as the market leader in their production.

The big innovation introduced in the market with the microinverter was the fact that it was able to convert, manage and monitor the energy of each panel, instead of the entire array. This was a pioneer product that allowed the creation of a smaller-sized inverter and increased the size of the array of solar panels.

The company has now been manufacturing this product for 13 years, but it is always trying to improve it. From trying to spread the costs of manufacturing across the product's components to higher efficiency electronics, the company introduces regular updates to the microinverters.

Financials

Enphase Energy revenues have been increasing for the past 4 years. From 2018 to 2019 it almost doubles its revenues, going from $316,159 to $624,333. From 2019 to 2020 the revenues also increased but in a smaller proportion, reaching revenues of $774,425.

The company registered a change in its capital structure between 2017 and 2018, since before 2018 the company has a negative value of equity, and since then the equity value has been increasing. Because of this its D/E has been decreasing, going from -19.54 in 2017 to 1.48 in 2020. This shows that the equity and debt value are more even. Another positive ratio is the quick ratio that is almost always bigger than 1. In the third quarter of 2020, it reached the value of 3.17 but fell to 1.67 in the last quarter of the year.

The company's ROA has been increasing in the past years, increasing from -26.55% n 2017 to 31.80% in 2019. Even though it has been increasing, in 2020 it decreased to 12.40%. The ROE is more volatile. Its values increase and decrease throughout the years. In 2020 the value decreased 71% when compared to 2019, to a value of 33.80%.

Lastly, the stock price registered a big increase in the last years. In 2017, the year close price was only $2.41, however in 2019 it was already $29.13 and in 2020 it reached the value of $175.47, which corresponds to an annual change of 571.53%. Currently (14/03/2021) its price is at $164.71.

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First Solar

Description

Now, more than ever, the world population is worried about climate change.

As we all know, the main human activity that causes climate change is the Energy Industry, which has been burning tons of fossil fuels per year, releasing Carbon Dioxide to the planet. With that in mind, something has to be done to protect the planet. For that, First Solar is committed to a sustainable world, through sustainable energy.

First Solar, Inc. is an American Solar Company, founded in 1990 by Harold McMaster (Deceased) as Solar Cells, Inc, having been rebranded in 1999 after being purchased by True North Partners, LLC.

The current CEO is Mark Widmar and the company is based in Tempe, Arizona.

First Solar's IPO was in November 2006, with the company being now listed on the NASDAQ with a current market cap around the $7.5B mark.

Strategy

First Solar whole business module banks on the thin-film technology, which has proven to be more cost-competitive than their competitors, while generating strong profits. It also has a better performance in extreme conditions, thus helping First Solar reach a broader market.

However, First Solar's objective is to reduce the number of PTO projects, since NTP projects make more ROI and reduce the risks in construction, like changing interest rates, which can heavily change the profitability.

Financials

The company's revenues have been pretty unstable throughout the last years, representing a decline that is sometimes surprised by a very good year. In 2015, First Solar's revenue was $4.41B, a value that declined to $2.24B in 2018, going back to $3,06B in 2019. In 2020, it decreased once again, to $2.7B. Analysts' forecasts reached a consensus of $2.92B, which would represent an okay growth of 7.9%.

The ROA has been growing since 2017, after a huge decrease in late 2016 from 11.82% in the first quarter of the year to -8.3% one year later. Q4 2020 ROA was 5,4%, which means it more than double the 3,14% from Q3 2020. The company's ROE followed a pretty similar path, but with more extreme values, falling to -10.87% in Q1 2017, with a 7.49% result in Q4 2020.

Liquidity-wise, First Solar has been steadily decreasing over the past two years, coming from 5.2x in Q4 2017 to 2.4x in Q4 2020. Even after the decrease, First Solar is still well above the sector average (0.7).

The D/E Ratio as of Q4 2020 was 8.7%, a lower value than the Energy sector's average, that being 33.6% It indicates that First Solar, like the rest of the industry, does not rely on lenders to do its business, but on Capital.

The stock (FSLR) price, as of 8th March 2021, the market closed at 71.39 USD. The Year-To-Date high was 107.53 USD, while the low was 71.45 USD, at the end of the 2021 February/March pullback.

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ExxonMobil

Description

ExxonMobil is currently one of the world's leading energy companies, with a total market capitalization worth $238.517 billion. This company mainly specializes in oil and gas and is headquartered in Irving, Texas. The company was formed in 1999 through the merger of Mobil Corporation and Exxon Corporation. ExxonMobil operates in a wide range of activities within this industry, from having investments and operations in resources such as coal, natural gas, chemicals to operating oil fields, pipelines, etc.

ExxonMobil is very well established, with a global presence and many years of experience which continuously contributes to them being one of the top companies in the energy industry for the past decades.

Strategy

ExxonMobil's mission is to be "The world's premier petroleum and petrochemical company." The company uses a mass-market business model and targets its services to companies and consumers that demand oil and gas. The firm mainly operates in the three main business segments which are Chemical, Upstream, and Downstream. Chemical refers

to ExxonMobil's offers pertaining to their broad portfolio of polymer and petrochemical products; Upstream refers to their capital intensive operations which include their exploration, production, and development of oil and gas; Downstream refers to the operations that contribute to converting crude oil and gas into a refined finished product.

The main unique selling proposition that the company presents is brand reputation and accessibility. ExxonMobil has over 35 oil refineries in more than 20 countries making the company very well recognized with their products very easily accessible to consumers in more than 20,000 locations worldwide.

Financial

In terms of financials, the highest that the company's revenues have been in the past four years was in 2018 when revenues hit $279,332,000, ever since then revenues have been going down. By the end of 2020, revenues hit $178,574,00 which is a 93.6% drop from 2018. This decrease in revenues can be due to the COVID-19 pandemic which caused the drastic fall in energy demand. The EBITDA has also been following a similar path as the company's revenues with EBITDA peaking in 2018 amounting to $50.646 billion with a 47.75% YoY growth rate by the end of that year. However, after that peak, this ratio has been on the decline going down to $25.831 billion with a -50.23% decline by the end of 2020.

Overall, the company's ROA has been on the decline in the past years. Going from 5.69% at the end of 2017 to -8.35% by the end of 2020. This recent negative ROA can be attributed to the loss of $22.4 billion the company suffered in 2020. This ratio is currently operating below the industry average of -4.71. The ROE also followed a similar route due to this loss, ending at -16.01% in 2020, and is currently operating below the current industry average of -8.07%.

In terms of liquidity, ExxonMobil's current ratio was mainly fluctuating from 0.82-0.74 from 2017 to 2019. However, in 2020, the ratio peaked at .93. This is the highest the current ratio has been in the past 4 years. Regardless of this peak, the company's ratio still continues to operate below the industry mean of 1.30.

The debt-to-equity ratio increased 150% from the 1st quarter of 2019 to the end of 2020, going from 0.10 to 0.25. This ratio currently operates below the industry mean of 0.42.

The stock price took a hit once the COVID-19 pandemic took place. Price before the pandemic was mainly fluctuating between $75-$56 for a few years. Although, once the pandemic hit, the price hit lows that had not been hit since 2005. Price had gone all the way down to $28 but is now (a year later) operating around the $54-$60 area in the month of March 2021. The stock price is currently presenting a strong uptrend which may continue as the company recovers from the losses that took place last year.

Conclusion

In conclusion, this industry suffered drastically once the COVID-19 pandemic began since demand and prices for energy heavily decreased and with the combination of geopolitical events such as the Russia and Saudi Arabia oil price war. With that, many companies within the industry suffered a loss or sharp declines in their revenues. However, over the past months, the energy industry is showing signs of recovery. Once lockdown and traveling restrictions ease up around the world, this would automatically lead to an increase in the consumption of energy. This ease in restrictions will likely allow for more upside within the industry meaning that currently, this may be a potential opportunity for investors in the medium to long-term.

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Our Club

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