

April 17, 2019

Renewable Energy

Energy

Industry Rating

Over Weight

Investment Thesis

We recommend an overweight rating on the renewable energy industry. Renewable energy is the industry of the future in the energy sector. It has developed as an alternative to conventional fossil fuels, as a result of the concerns about fossil fuel's negative effects on the environment. Renewable energy, especially in the areas of solar power and wind power, is a relatively young industry with a high rate of growth. Demand for renewable energy has grown at a CAGR of 16% over the last decade and should continue to grow by more than 10% per year in the near future. We see opportunity for companies in this industry to innovate and become more cost-effective as they capitalize on this strong growth in demand.

Drivers of Thesis

- Strong growth in demand and consumption of renewable energy, particularly of wind power and solar power, is poised to continue for the foreseeable future
- Innovation will continue to improve productivity and reduce costs of energy-generating facilities going forward
- Governments will continue to promote renewable energy and commit to using cleaner energy with their policy decisions

Risks to Thesis

- A downturn in the overall economy may adversely affect investment in new renewable energy systems
- The current President of the United States is skeptical of climate change and the merits of renewable energy, and favors tariffs that may disrupt the efficiency of global markets; federal government policies under his administration may not be favorable to the industry

Industry Statistics

Some Key Competitors

Company	Market Cap
First Solar	\$5.076 B
SunRun	\$1.490 B
Canadian Solar	\$1.158 B
Vestas Wind	\$16.183 B
Siemens Gamesa	\$10.007 B
General Electric	\$92.461 B
Renewable Energy Group	\$1.065 B
Valero	\$35.977 B
Darling Ingredients*	\$3.514 B

*Henry Fund holding

Profitability

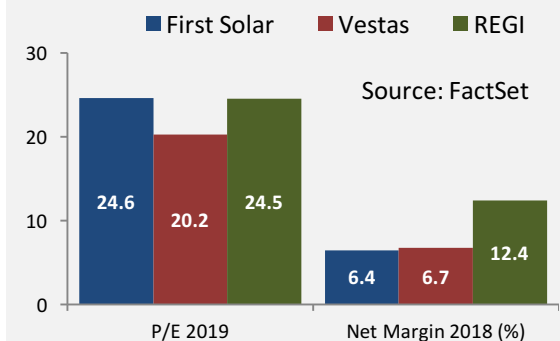
Gross Margin	14.86%
Net Margin	3.34%
Return on Assets	1.53%
Return on Equity	6.41%

Price Data

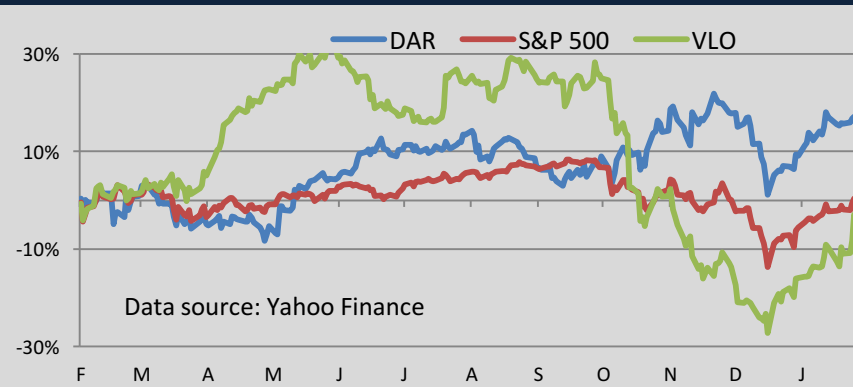
P/E	20.89
Three-year Beta	0.92

(Numbers are averages of the companies listed above)

Data source: FactSet and Yahoo Finance



12 Month Performance



Industry Description

Renewable energy has developed and continues to develop as people learn more about the environment and choose to place higher priority on clean energy. Prominent segments of modern alternative energy include solar power, wind power, and biofuel. This industry is relatively young and growing quickly, especially in the areas of solar power and wind power. Drivers of this industry include growing consumer demand, technological progress, and government decisions encouraging the development of cleaner energy to replace fossil-fuel-based energy.

EXECUTIVE SUMMARY

Renewable energy has developed as a cleaner and more environmentally friendly alternative to traditional energy sources. Its long-term outlook is good because of the need it satisfies: people are growing increasingly concerned about climate change and the environment, and renewable energy is an answer to those concerns. Overall, it is a relatively new industry that has experienced significant growth recently. The industry's growth going forward will be determined by factors such as demand, technological progress, and government policies. All three of these areas have bolstered renewable energy's growth recently, and we expect these strong trends to continue into the future. Wind power and solar power both have high prospects for the next few years, and we view wind power particularly favorably because it has provided more evidence that it can sustain profitability without government subsidy. Because of this high potential for growth in the coming years, we have given the Renewable Energy industry an overweight rating.

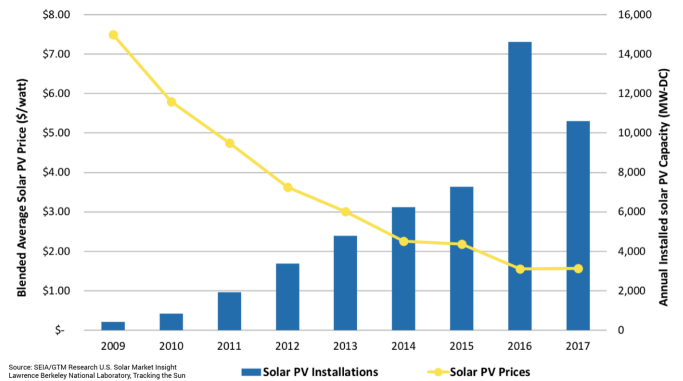
INDUSTRY DESCRIPTION

Renewable energy is a relatively young industry. It has developed recently as the world has come to know more about climate change and the adverse effects that many conventional sources of energy can have on the environment. The industry attempts to create viable alternatives to fossil fuels that do not have the same troubling environmental consequences as fossil fuels. Because of its relative immaturity, the renewable energy industry's competitors have great potential to achieve technological advancements and economies of scale in the near future. Significant segments of the modern renewables industry include solar power, wind power, and alternative fuels.

Solar Power

Solar power is the cleanest and most abundant form of renewable energy.² Using the technology of photovoltaics, solar energy devices can generate electricity by being exposed to light. As this technology has developed and demand for solar energy has grown, the costs of photovoltaic devices have decreased by more than 70% in the last decade, as shown in the following chart.

Volume and Cost of Solar Device Installation Per Year



Source: SEIA

Declining costs are part of the economies of scale that should help a relatively young solar power industry grow into one of the largest worldwide sources of energy.³

Another important type of technology is solar heating technology, which captures the thermal energy of the sun's rays and converts it to power that can control the temperature of air and water in residential, commercial, and industrial buildings.² Further development of this technology would reduce the need for fossil fuels in powering HVAC systems and water heaters.

Leading Solar Power Companies

Company	2018 Revenue	2018 Net Margin
JinkoSolar	\$3,785 million	1.6%
Canadian Solar	\$3,745 million	6.3%
First Solar	\$2,246 million	6.4%
SunRun	\$760 million	3.5%
Vivint	\$290 million	-5.4%

Data source: FactSet

The table above represents some of the major players in the solar energy space. First Solar claims to be the industry leader not only in performance, but also in sustainability measures. Their website promotes their advanced technology of thin-film photovoltaic panels, which not only require less material and resources to build (improving their environmental record), but also outperform Canadian Solar's products, delivering more usable energy in hot and humid conditions.³³ First Solar's 10-Q for 2018 Quarter 3 reported a 35% year-over-year increase in megawatts of solar power produced.³⁴

Canadian Solar and First Solar are the only North American companies within the world's top 10 suppliers of photovoltaic modules. The world leader in that regard is currently the China-based company JinkoSolar, although First Solar is one of the world's fastest-growing suppliers.³⁷ As shown in the table above, none of these companies are tremendously profitable right now. With net income of about 6% of total revenue, First Solar and Canadian Solar appear to be two of the more profitable companies in the solar industry. We see First Solar as the best-positioned company in this space due to its current growth rate, its relatively high profitability, and the innovation and quality of its products.

Given the low profitability of the selected companies, it would be reasonable to express concern that the solar energy industry as a whole may not be profitable and may depend on government subsidy to grow. However, we remain optimistic about the prospects of solar power. The industry is early enough in its life cycle that its profitability should not be expected to be particularly high. While these companies may lean on government help to remain profitable in the very short term, we see a natural opportunity for growth due to consumers' growing demand for clean energy. As solar companies realize this growth, they should continue to become more cost-effective by innovating and achieving economies of scale, and the profitability issue should take care of itself before long.

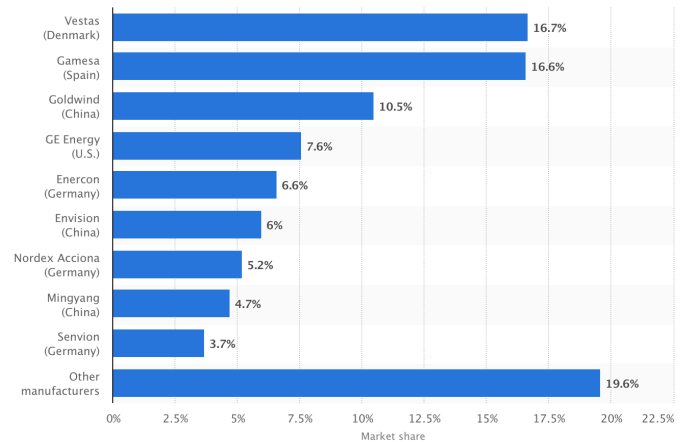
Wind Power

Wind power is generated using wind turbines, complex machines which use the kinetic energy of natural air flows to produce electricity. When the wind causes the turbine's blades to rotate, it activates a generator inside the turbine that creates electricity. As the wind speed increases, the amount of electricity generated also increases, up to a specified point where the wind is too strong and the turbine shuts down to prevent mechanical damage. Turbines are often interconnected with each other so that the power generated by each individual machine goes into the same grid, from which utilities can direct the energy to where it is needed.⁴

The average 1.5 MW wind turbine could be expected to generate more than 3 million kilowatt-hours of electrical energy in a year, which would be enough to power more

than 300 American households.⁵ But many turbines are larger and have more capacity than a 1.5 MW turbine, particularly in the world of offshore wind, where many turbines are rated in the 6 to 12 MW range.³¹

Worldwide Wind Power Market Share



Source: Statista

The graph above shows market share of competitors in the wind power space. Vestas Wind Systems and Siemens Gamesa Renewable Energy are the top players in this market. European companies appear to be leading the way in worldwide wind energy production, with five of the top nine competitors based in Europe. In its 2018 Quarter 3 financial report, Vestas stated that its order volume was at an all-time high and reported an organic revenue growth rate of 14%.³²

Vestas has averaged a net income margin of just under 8% over the last five years, while Gamesa has reported an average net margin of about 5% in that same period, and Goldwind has achieved at least 11% net margin in each of the last three years.¹ Thus, in terms of profitability, it seems that the wind power industry might be slightly ahead of solar power in the development process. We see similar prospects for this industry as for the solar industry. It may be slightly ahead of the curve in terms of being profitable without government assistance, but we see similar potential to grow its revenue substantially as consumer demand for renewable energy continues to grow by more than 10% every year, and similar potential to improve its technology and become more cost-effective in the process. As Vestas is currently the world leader in wind power market share and is beating Gamesa in

profitability, it appears poised to maintain the top position in this industry.

Biofuels

Biofuels are alternative fuels that are made using biomass, an energy resource consisting of plant-based materials. The two main types of biofuels are ethanol and biodiesel. The typical way to consume biofuels is in a mixture with petroleum-based fossil fuels; common examples include E10 (10% ethanol, 90% gasoline) and B20 (20% biodiesel, 80% petroleum diesel). Thus, the fuel products are generally not completely clean, but are relatively cleaner than using only petroleum-based fuel.²⁴ Ethanol is an alcohol made with the starch in corn or other plants. It has a higher octane rating than gasoline, which is good for meeting minimum octane requirements, but it also has less energy per gallon than petroleum gasoline.²³ Biodiesel is fuel made specifically for compression-ignition engines, created from renewable resources such as vegetable oils, animal fats, or recycled cooking grease.²⁴

Companies in Biofuel Markets

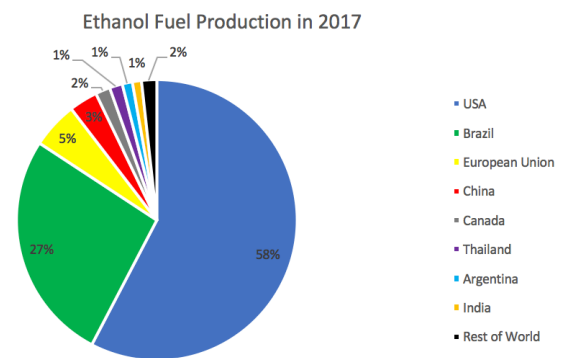
Biofuel Companies	2018 Revenue	2018 Net Margin
Renewable Energy Group, Inc (REGI)	\$2,383 million	12.4%
Green Plains Inc.	\$3,821 million	0.4%
REX American Resources	\$487 million	6.5%
Other Companies Engaged in Biofuel		
Valero	\$117,000 million	2.7%
Archer-Daniels-Midland	\$64,300 million	2.8%
Bunge Limited	\$45,745 million	0.6%
Darling Ingredients	\$3,391 million	3.0%

Data source: FactSet

The table above represents some significant companies in the biofuel industry. Valero primarily deals in petroleum products, but also has an ethanol business segment. Archer-Daniels-Midland and Bunge Limited compete in agricultural commodities, and some of these commodities can be used in making biofuels.¹ Darling Ingredients, a current Henry Fund holding, converts animal by-products and recycled oils into natural ingredients for food, feed, and fuel. Darling competes in the renewable energy space with its DAR PRO Bioenergy brand and its Diamond Green

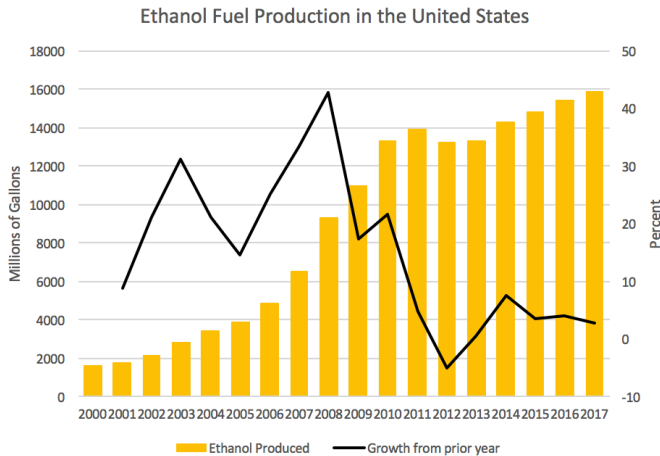
Diesel joint venture with Valero.²⁸ Darling's fuel ingredients segment was responsible for 7.26% of its total sales and 13.89% of its total assets in the fiscal year 2017.²⁶

Among the selected companies in this industry, Renewable Energy Group, Inc. appears to stand out as a top performer. Among companies dedicated purely to biofuel, REGI is one of the leaders in sales, and outperformed its peers with a 12.4% net margin. The company has also seen its revenue grow at a CAGR of 20% over the past three years.¹ Renewable Energy Group appears to be in the best position in this market at the moment.



Data source: Renewable Fuels Association

The pie chart above shows the world's ethanol production in 2017 broken down by region. The chart shows us that the majority of all worldwide ethanol production is happening within the United States. Furthermore, we see that 85% of all ethanol production is attributable to either Brazil or the USA, while the rest of the world is barely getting involved, relatively speaking.



Data source: Renewable Fuels Association

This graph illustrates the annual production of ethanol fuel in the USA since 2000, and the black line represents each year's growth rate over the previous year. The black line shows us that growth in American ethanol production, although strong throughout the prior decade, has hovered around zero since 2010. Taking these two graphs together, it is apparent that the ethanol market in the United States, far and away the world leader in ethanol fuel, is stagnating. Unlike the solar and wind power industries, the biofuel industry may be past its prime. Biodiesel may sustain modest growth in the near future, bolstered by the European Union,²⁷ but ethanol fuel appears to have little upside going forward. Part of the reason we see less growth in biofuel relates to its marginal environmental benefit: whereas wind and solar are clean ways to generate energy, biofuels are typically consumed in a mixture with fossil fuels and therefore achieve a relatively small reduction in emissions.

INDUSTRY TRENDS

The three biggest trends that will determine the growth of renewable energy in the near future are government policies, interest from consumers and investors, and development of the industry's technology.

Policies

Government initiative has been an important factor throughout the development of the renewable energy industry. Nearly half of the wind/solar development in the United States in the last 20 years has been due to state

government mandates such as renewable portfolio standards (RPS).¹⁴ In 2015, Hawaii announced a plan to achieve a 100% renewable portfolio standard by 2045, becoming the first state to set a target RPS of 100%, and they've set an example that other states are interested in following.⁷ At the local government level, more than 200 mayors have embraced the goal of 100% renewable energy.⁸

The United States government has recently decided to extend its Investment Tax Credit applicable to residential solar energy systems. As of now, the tax credit is 30% for systems installed in 2019, 26% for systems installed in 2020, 22% in 2021, and is set to expire after 2021.⁹ So investment in solar power is being encouraged by the federal government, and the sooner, the better, because of the step-down nature of the tax credit. Thus, this policy should spur growth in the solar energy market in the immediate future, and the great opportunity in this space may be right now. Several state governments have similarly created tax incentives for investing in renewable energy projects.¹⁰

In January 2019, the government of New Hampshire committed to developing offshore wind power and its governor, Chris Sununu, requested that the Bureau of Offshore Energy Management establish an intergovernmental task force for offshore wind energy.¹¹ New Hampshire and other coastal states in the Northeast are following in the footsteps of countries in Western Europe, which have been experiencing massive growth in offshore wind development in recent years.¹² Offshore wind power in the United States is poised for growth, considering the policies encouraging it and the success it has already had in Europe.

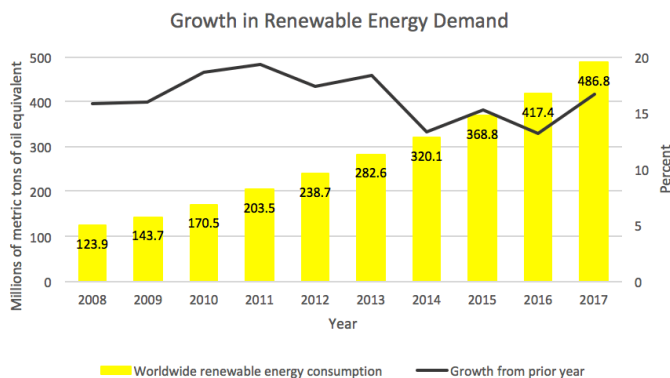
Some state governments are also exploring energy storage development,¹⁰ and in February 2018, the Federal Energy Regulatory Commission created Order 841 to prevent barriers to entry that might keep energy storage resources out of energy markets.¹³ Energy storage technology should help with integrating renewable energy into the market and ensuring the stability of the resources available. With legislation encouraging its development, as well as the declining costs of installing energy storage systems,¹⁰ energy storage's potential growth is high.

On the other hand, one concern regarding policies is the current administration's attitude toward the environment

and alternative energy. The President of the United States was clear in his election campaign that he is not sold on the science behind climate change and that he wanted to restrict the Environmental Protection Agency’s regulatory power, a promise on which he has delivered several times so far in his presidency.²¹ It has also been noted that the President criticizes the burgeoning wind and solar industries, yet he is very bullish on the future of the coal industry, which has been heading in the wrong direction in recent years.²² Thus, there is some cause for concern that the President and his administration’s policies could attempt to make it more difficult for renewable energy to grow. Furthermore, the President’s inclination to impose tariffs and create prolonged trade conflicts promises to have an adverse effect on a wide variety of industries, and does not bode well for global cooperation in renewable energy development. However, a spokesperson for the Solar Energy Industries Association believes that the solar industry will continue to grow in spite of any possible government resistance, due to its strong trends in growing demand and declining costs.²²

Interest

There is also ample demand for the development of renewable energy. Deloitte notes the “voluntary demand,” as opposed to procurement driven by policies. More than half of the solar energy projects in the first half of 2018 were voluntary investments,¹⁴ which illustrates that much demand for renewable energy exists because cleaner energy has become a high priority for many consumers.



Data source: Statista

The above graph shows the worldwide consumption of renewable energy, measured in millions of metric tons of

oil equivalent. That figure has consistently grown by more than 10% year over year, to the point that the worldwide renewable energy market was four times larger in 2017 than it was in 2008, implying a CAGR of 16.4%. If the current growth pattern holds, worldwide renewable energy consumption could increase from 486.2 million metric tons of oil equivalent in 2017 to more than 750 million metric tons in 2020 and could exceed one billion metric tons per year by 2023. Because the source of their energy is becoming increasingly important to consumers, the potential demand for renewable energy promises to be immense going forward.

In the interest of corporate social responsibility, and because the priorities of consumers and governments are transitioning more and more toward renewable energy, corporations are choosing to explore their renewable energy options. More than 150 corporations have joined the RE100 group, a global initiative encouraging businesses to commit to the goal of sourcing 100% of their electricity from renewable energy.¹⁵ That may be part of the reason that corporations in the United States purchased more wind- and solar-generated energy in 2018 than ever before, and also invested in resources for on-site generation of renewable energy.¹⁴ Some corporations are also imposing sustainability standards on their supply chain participants, meaning that companies of all sizes will find it in their best interest to invest in cleaner forms of energy.

If the renewable energy industry continues to grow and develop, the group with the most to lose would be the fossil-fuel-based energy companies. Understandably, many of these companies are choosing to get involved in the growth of renewable energy rather than get left behind. Investments by supermajor oil companies in renewable energy include Total S.A’s ownership stake in SunPower Corporation, BP’s partnership with Lightsource Renewable Energy and joint venture with DuPont to develop renewable fuels, and ExxonMobil’s joint venture with Synthetic Genomics to develop genetically modified algae that can create renewable crude oil by photosynthesis.¹⁶ We would argue this particular trend is important for two reasons: although big oil may be viewed as “the enemy” that environmentalists and renewable energy are trying to fight against, oil companies are actually contributing to the cause for cleaner forms of energy, perhaps as a gesture of goodwill and corporate

social responsibility, or perhaps because they believe that renewable energy will be the future of their product lines; and more importantly, big oil companies have immense amounts of capital,³⁵ so their willingness to invest in clean energy bodes well for the industry's growth.

Technology

Another important factor driving the growth of renewable energy is the technological advancement in the industry. As the industry grows, people gain more expertise and more research is done, thus the engineers are able to improve on the energy generation systems and equipment. For wind power, these improvements have resulted in an increase of the average turbine's capacity factor (a measure of productivity) from 22% to 35%, and a reduction in the costs of that energy from 55 cents per kilowatt-hour to less than 3 cents per kilowatt-hour.¹⁷ A study toward the end of 2018 found that a new turbine with a vertical-axis design could cost significantly less to build offshore than the common fan-blade turbines. Innovation in the solar energy space, including better alternatives to traditional silicon cells, have made solar panels more effective and less costly today than ever before.²⁹ There has also been recent development of photovoltaics in textiles, which will create clean energy generation capacity in clothes and household items such as window curtains.²⁹ Ground-mounted solar panels are becoming a legitimate alternative to roof-mounted panels due to the effective innovation in tracking mount technology. The tracking technology allows the panels to turn and tilt throughout the day to follow the position of the sun, thus maximizing the energy generation capacity of the panels.²⁹

Sunrun was a pioneer of energy software in 2014 when it introduced BrightPath, a comprehensive automated software for optimizing residential solar power systems to deliver maximum cost savings to those homeowners.¹⁸ In late 2018, the Australian company GreenSync launched deX, which stands for "decentralized energy exchange." deX creates an open market where utilities, businesses, and households can trade energy with each other.¹⁹ These developments in software and marketplace technology promote the user-friendliness of the renewable energy market and allows consumers more power to choose clean energy options that make financial sense for them. As the renewable energy industry grows, its facilities are

becoming more productive and more cost-effective, due in large part to the technological progress in renewable energy infrastructure and software.

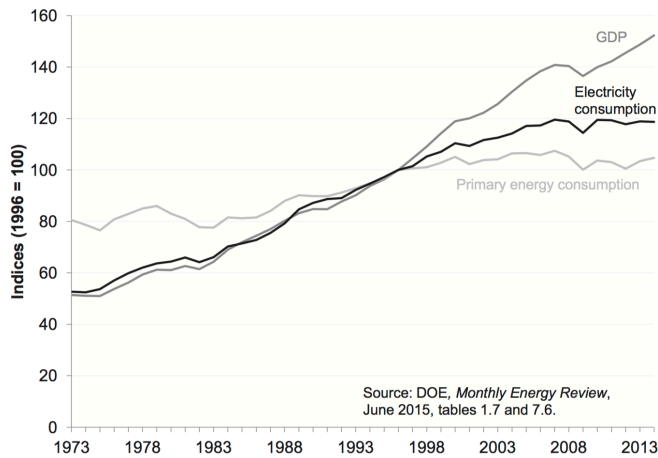
ECONOMIC OUTLOOK

GDP

We are cautiously optimistic about the short-term prospects of the overall economy. We have forecasted that United States real GDP will continue to grow at an annualized rate of around 2.5% for the remainder of 2019. However, we understand that the longer-term outlook is uncertain at this point, and that there may be a recession looming on the horizon. Our concern would be the effect of a recession on new investment in renewable energy systems. Increasing the capacity of renewable energy generation requires capital expenditures to build the energy generation systems. These expenditures were well sustained by the strong economy in recent years, but companies may consider them less feasible during an economic downturn, opting to curb their investment in technology and infrastructure for renewable energy generation and save money instead. We are optimistic that the economic conditions in the near future will remain favorable for investment in renewable energy, but are wary of a recession possibly cooling down the industry's growth.

GDP should also affect energy demand and consumption, although to a lesser extent. It used to be understood that GDP growth and increases in total nationwide electricity consumption moved very closely together, but that is no longer the case, as the following chart shows.³⁶

Inflation-adjusted (Indexed to 1996 Dollars) GDP and Electricity Consumption, 1973–2014



Source: Hirsh and Koomey

The graph illustrates that GDP and electricity consumption used to move in lockstep, but started to diverge around 1996. Since then, GDP has grown considerably more than electricity consumption. Formerly, we might have expected a 1% increase in GDP to result in a corresponding 1% increase in electricity demand. However, it now appears that a 1% change in GDP will result in a corresponding change in electricity demand of much less than 1%. Therefore we can expect that overall energy demand will remain fairly stable, with the potential decrease associated with an economic downturn being very slight.

Interest Rates

In early 2018, during a period of rising interest rates, some experts expressed concern about renewable energy’s interest rate risk, stating that “any raise in interest rates will be felt in capital-intensive businesses” and that the effect of rising interest rates on cost of capital would likely be stronger for renewable energy systems than for fossil fuel companies.²⁰ However, we expect that the period of rising interest rates might be over. After a series of rate hikes throughout 2018, the Federal Reserve shifted its stance in December, indicating that it may have raised its target Federal Funds Rate for the last time in this business cycle. Indeed, with the possibility of a recession in the near future, the Fed’s next move with its target rate may likely be a cut instead of an increase. Also, the 10-year Treasury yield has been declining for much of 2019. After beginning

March at 2.76%, it briefly fell below the 1-year yield at 2.44% on March 22 and bottomed out at 2.39% the following week.

These developments indicate that the economy has reached a point where interest rates are no longer increasing. A period of stable to decreasing interest rates going forward should be favorable for the profitability of renewable energy generation systems. If interest rates were to increase instead, the cost reductions renewable energy companies are achieving through innovation and economies of scale may be offset to an extent by rising costs of capital. However, we believe that interest rates are more likely to fall than rise over the next few years.

CATALYSTS FOR GROWTH

Put simply, the catalyst for growth in the renewable energy industry is further investment in alternative energy. More specifically, further investment should come from a variety of sources: consumers will continue to prioritize the cleanliness of their energy in addition to its cost; researchers and scientists will continue to look for new ways to make renewable energy generation more effective and/or less expensive; businesses, including the ones that normally compete in petroleum and other fossil fuels, will likely try to find market share in an industry with great potential; and governments will likely strive to lead by example in the race for more environmentally friendly energy consumption. We expect these trends to drive strong growth going forward.

INVESTMENT POSITIVES

- Worldwide renewable energy consumption has continually seen year-over-year growth of more than 10% per year for the last decade. We expect that this trend in demand will hold, especially in the areas of solar and wind power, and that the market for renewable energy will continue to grow by more than 10% per year and take market share away from fossil fuels.
- Governments, particularly at the state and local level in the USA, have attempted to support the development of renewable energy, and we expect them to continue to promote and prioritize clean energy with their policy decisions.
- Innovation is quickly improving the efficiency and cost-effectiveness of renewable energy generation systems.

Continued technological advancement will drive further development of more effective and more affordable clean alternatives to fossil fuel energy.

INVESTMENT NEGATIVES

- Macroeconomic factors: if interest rates rise, costs of capital will rise in a capital-intensive industry, slightly diminishing the profitability of existing renewable energy generation systems and systems in progress. On the other hand, if GDP decreases and the economy enters a recession, it may dissuade companies from building new systems and increasing the capacity of renewable energy generation.
- Policy factors: given the current President and administration in the United States, government policy at the national level may not always be favorable toward renewable energy development, although state and local governments have supported transitioning toward renewable energy.

KEYS TO MONITOR

Some important things to look for going forward would include policy news, Federal Reserve news, and economic data releases. The data releases and Federal Open Market Committee strategy reports will provide information on macroeconomic keys to the immediate future. News about government policy will indicate the public sector's attitude toward renewable energy and how supportive governments will be going forward, as these factors are likely to influence the industry's growth. Our positive rating of this industry also assumes that strong trends in demand and advancing technology will continue, so any other news involving renewables-related companies, renewable energy demand from consumers, and technological innovation in the industry will be important to follow in monitoring these trends.

Companies to monitor include Vestas and First Solar. We see wind and solar power as promising areas within renewable energy, and have identified these companies as well-positioned leaders of their respective industries. We expect Vestas and First Solar to see strong revenue growth and improving profitability, and to be able to sustain profitability with or without a tax credit from the government. It will be useful to monitor these companies to see whether they meet these expectations.

REFERENCES

1. FactSet
2. Solar Energy Industries Association (SEIA)
<https://www.seia.org/initiatives/about-solar-energy>
3. DNV GL
<https://eto.dnvgl.com/2018#Energy-Transition-Outlook-2018->
4. American Wind Energy Association (AWEA)
<https://www.awea.org/wind-101/basics-of-wind-energy>
5. National Wind Watch
<https://www.wind-watch.org/faq-output.php>
6. Statista
<https://www.statista.com/statistics/274101/world-renewable-energy-consumption/>
7. National Caucus of Environmental Legislators (NCEL)
<https://www.ncel.net/2018/02/07/landmark-legislation-hawaiis-100-rps-2045/>
8. Sierra Club
<https://www.sierraclub.org/ready-for-100/mayors-for-clean-energy>
9. Solar-Estimate
<https://www.solar-estimate.org/solar-incentives/federal-solar-tax-credit>
10. National Conference of State Legislatures (NCSL)
<http://www.ncsl.org/research/energy/renewable-energy-legislative-update-2017.aspx>
11. Greentech Media
<https://www.greentechmedia.com/articles/read/new-hampshire-enters-the-offshore-wind-race#gs.Q3rF0t0d>
12. Maritime Executive
<https://www.maritime-executive.com/article/europe-s-offshore-wind-power-grew-twenty-five-percent-in-2017>
13. Federal Energy Regulatory Commission (FERC)
<https://www.ferc.gov/whats-new/comm-meet/2018/021518/E-1.pdf>
14. Deloitte
<https://www2.deloitte.com/content/dam/Deloitte/us/Documents/energy-resources/us-renewable-energy-outlook-2019.pdf>
15. RE100
<http://there100.org/re100>
16. Motley Fool
<https://www.fool.com/investing/2018/06/04/big-oil-is-investing-billions-in-renewable-energy.aspx>
17. energy.gov

<https://www.energy.gov/eere/next-generation-wind-technology>

18. Sunrun

<https://www.sunrun.com/why-sunrun/about/news/press-releases/sunrun-unveils-brightpath-first-end-end-automated-software>

19. GreenSync

<https://greensync.com/solutions/dex/>

20. Power Engineering International (PEI)

<https://www.powerengineeringint.com/articles/2018/02/renewables-sector-upbeat-despite-financial-warnings.html>

21. National Geographic

<https://news.nationalgeographic.com/2017/03/how-trump-is-changing-science-environment/>

22. MarketWatch

<https://www.marketwatch.com/story/red-states-love-renewable-energy-so-why-does-trump-bash-it-2018-09-13>

23. Alternative Fuels Data Center (AFDC)

https://www.afdc.energy.gov/fuels/ethanol_fuel_basics.html

24. energy.gov

<https://www.energy.gov/eere/bioenergy/biofuels-basics>

25. Renewable Fuels Association

<https://ethanolrfa.org/resources/industry/statistics/>

26. Darling Ingredients 10-K

27. Freedonia Group

<https://www.freedoniagroup.com/industry-study/world-biofuels-3179.htm>

28. Darling Ingredients

<https://www.darlingii.com/our-brands/>

29. EnergySage

<https://news.energysage.com/solar-panel-technology-advances-solar-energy/>

30. Yahoo Finance

<https://finance.yahoo.com>

31. General Electric

<https://www.ge.com/renewableenergy/wind-energy/turbines>

32. Vestas Q3 Financial Report

https://www.vestas.com/~media/vestas/investor/investor%20pdf/financial%20reports/2018/q3/181107_43_company_announcement.pdf

33. First Solar

<http://www.firstsolar.com/Modules/Our-Technology>

34. First Solar Financial Reports

<https://investor.firstsolar.com/home/default.aspx>

35. Royal Dutch Shell News

<https://royaldutchshellgroup.com/2018/11/04/99789/>

36. Hirsh and Koomey

<https://law.stanford.edu/wp-content/uploads/2016/06/Electricity-Consumption-and-Economic-Growth.pdf>

37. PV Tech

<https://www.pv-tech.org/editors-blog/top-10-solar-module-suppliers-in-2018>

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