Renewable Power: Emerging and Profitable

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Renewable Power: Emerging and Profitable

By Robert Rapier
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When you think about leading edge technologies that shape our lives, what kinds of businesses come to mind? The short list would include electric vehicles, self-driving automobiles, block-chains, and genomic medicine. Those are all real technologies that will have a huge impact on our future. You can buy shares of companies with exposure to each of these niches today, but many of these companies are high risk and are not yet profitable.

There is a better investment bet on breakthrough tech. It is a segment that has grown exponentially for over a decade, is set to continue to grow at a blistering pace for the foreseeable future, and is full of profitable companies.

The Fastest Growing Sector

I am referring to the renewable power sector, which admittedly covers a lot of territory. Within this sector there are the long-established players, like hydropower and geothermal power, and more recent entrants, like wind and solar power. There is also biomass, which has provided energy for mankind since the discovery of fire. But modern biomass is now being used to displace coal in power plants.

How rapidly have these areas grown? Each year in June two reports are released that provide a comprehensive answer to that question.

The Renewables Global Status Report (GSR) focuses exclusively on the world's renewable energy markets.

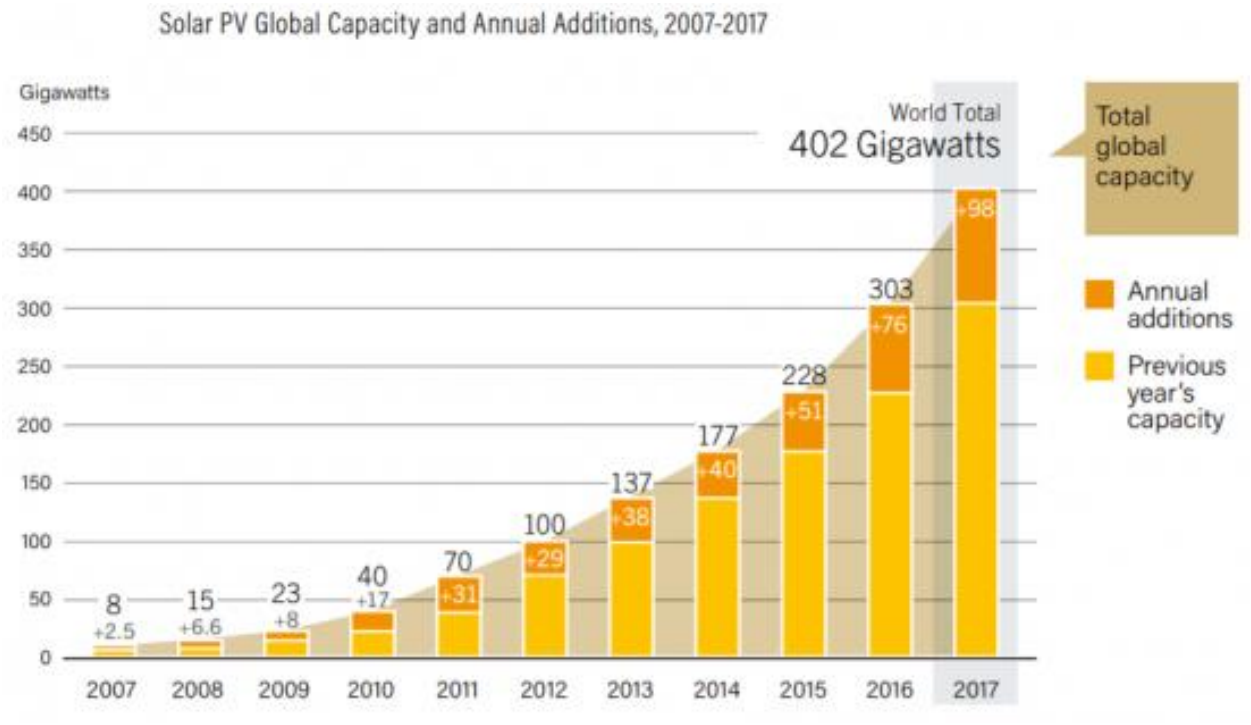
The annual BP Statistical Review is a much more comprehensive report, covering global and country-level production and consumption statistics of renewables and fossil fuels.

While the reports differ in focus and on some of the finer details, both agree that the growth rates for renewable power have been astonishing.

Solar Shines Bright

Let us start with one of my favorite topics, solar power.

In 2017, the world added another 98 gigawatts (GW) of solar photo-voltaic capacity to reach 402 GW of global capacity:



Source: GSR 2018

The BP Statistical Review provides more granular detail. China, for instance, had a mere 100 megawatts (MW) of solar PV capacity a decade ago. Then China added capacity at a triple-digit annual growth rate for a decade, closing 2017 with an astonishing 131 GW of capacity. If you are keeping score, that is a 1,310-fold expansion in the country's installed solar PV capacity in one decade.

It should not be a surprise then that many of the world's leading solar companies, including the world's top PV module supplier, **Jinko Solar** (NYSE: JKS), are Chinese. Recent news that China would scale back on its solar subsidies caused many of these companies to retreat, but the long-term prospects remain excellent.

The U.S.A. jumped over Germany into second place last year with 51 GW of total solar PV capacity. The U.S. average annual growth rate over the past decade of 64% is diminished only in comparison to China's.

Harnessing the Wind

Wind power has actually grown globally at slightly more than 20% per year for over a decade, but that looks pretty mild next to solar PV's 49% average annual growth rate. There is still more installed wind power (515 GW) than solar PV capacity (402 GW) globally but, at the current growth rates, it will not be long before solar PV takes the top spot.

China again leads all countries for installed wind capacity, with 164 GW of capacity and a 50% average annual growth rate over the past decade. The U.S.A. is also again in second place, with 88 GW of total wind capacity and a 10-year average annual growth rate of 22%.

Danish company **Vestas Wind Systems** (OTC: VWSYF) was the world's largest manufacturer of wind turbines in 2017 with 16.7% of the global market. The Spanish company **Siemens Gamesa Renewable Energy** (OTC: GCTAF) was close behind with 16.6% of global market share, followed by China's **Xinjiang Goldwind Science and Technology** (OTC: XNJJY) with a 10.5% global share, and **General Electric** (NYSE: GE) in the U.S.A. with a 7.6% share.

The Mature Choices

Geothermal and hydropower are both mature renewable technologies, with 10-year average growth rates of only about 3%. There are established companies for investors interested in these areas, but the growth rates will not come close to matching those of wind and solar power. That said, income investors might be interested in an offering like **Brookfield Renewable Partners LP** (NYSE: BEP), which currently provides a 6.5% yield through its (mostly) hydropower and (some) wind power assets.

Power derived from biomass has seen a growth spurt in recent years, driven by the conversion of coal-fired power generation to co-fired or dedicated biomass-fired plants in northern Europe, South Korea, and Japan.

These plants produced nearly five times as much electricity globally as was produced by solar PV in 2017. Growth rates are lower at about 20% per year in recent years, but there is at least one publicly-traded company in this area for investors' consideration.

Enviva Partners (NYSE: EVA) is a master limited partnership (MLP) based on the sale of wood pellets to European power plants. Enviva Partners entered into the wood pellet business in 2010 and is now the world's largest supplier of utility-grade wood pellets to major power generators. Enviva went public in 2015, and has consistently yielded 8%-10% since. This MLP has also increased its payout in every quarter since the IPO (10 straight quarters).

So, there is a little bit of something for everyone in the renewable power sector, and it is a sector with a lot of room to grow.

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See ABOUT THE AUTHOR on the following page.

ABOUT THE AUTHOR

It is hard to imagine anyone better suited to covering the energy-investment waterfront than Robert Rapier. Robert is no armchair analyst—he has two decades of in-the-trenches experience in a wide range of fossil fuel and biofuel technologies, including refining, natural gas production, gas-to-liquids, ethanol production and butanol production. During a six-year stretch at ConocoPhillips, Robert ran a team of engineers in Scotland working on oil and gas projects in the North Sea.

For two years, Robert was an efficiency expert in a Texas petrochemical plant. The process changes he implemented saved the facility $9 million a year. He later worked as the Engineering Director for a Dutch environmental-technology company and provided engineering support for a Chinese facility the company was constructing.

Robert was also a butanol engineer in Germany for the Celanese Corporation, where he designed a novel butanol unit that cut production costs by $5 million per year.

In all, Robert has spent more than a dozen years working on liquid fuels technologies. Along the way he has picked up five patents, including one for a breakthrough way to convert ethane into ethylene (U.S. Patent 7,074,977).

Now, in addition to guiding readers to timely energy plays in his twice-monthly *Energy Strategist*, Robert travels the world evaluating start-up energy companies for deep-pocketed investors. After grilling management and assessing the technology on-site, he makes a go/no-go investment decision. His wealthy private investors and hedge fund backers trust him to make the right choice for the same reason we do: his vast real-world experience in just about every facet of the energy industry. If Robert votes thumbs-up, millions of dollars flow into these cutting-edge outfits.

Robert earned his master of science in chemical engineering and a bachelor of science in chemistry and mathematics (double major) at Texas A&M University. He tells us he was "this close" to finishing his Ph.D. before he decided he was having a lot more fun making money in energy stocks.

A prolific writer, Robert's articles have appeared in *Forbes*, *The Wall Street Journal*, *The Washington Post* and the *Christian Science Monitor* — and he has been a featured expert on *60 Minutes* and *The History Channel*. His new book, *Power Plays: Energy Options in the Age of Peak Oil* (Apress, 2012), helps investors sort through doom and gloom, hype and misinformation to understand the true costs, benefits and trade-offs for each of our major energy options.

In what little spare time he has left, Robert consults for a number of energy projects, including biodiesel, ethanol, butanol, and biomass gasification facilities.