



Solar: The Energy of Tomorrow

Mia Edghill | Environmental Practicum | 12/16/19

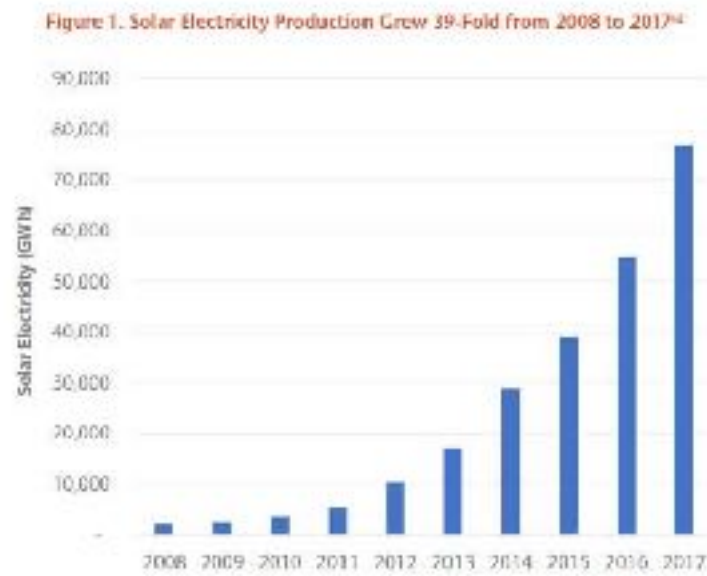
Introduction

When it comes to power generation, solar is the new best thing that is slowly but surely edging out various other power generation systems. This movement towards solar power has created a need for more solar panels around the world, for both businesses and regular consumers. As solar becomes more viable with innovations to both solar technology and batteries, there will be an increasing need for the manufacturing of panels.

SOLLAR POWER

Solar power has been a rising alternative to fossil fuels for years. Since the creation of practical solar cells in 1954, solar has been on a journey to creating clean energy since its inception. As the price of solar panels has decreased and as their efficiency has increased dramatically, there been a sharp increase in the number of both individuals and companies that look to solar panels as the next energy producer. This change over likely

will lead to a substantial increase in the amount of solar innovation and procurement for

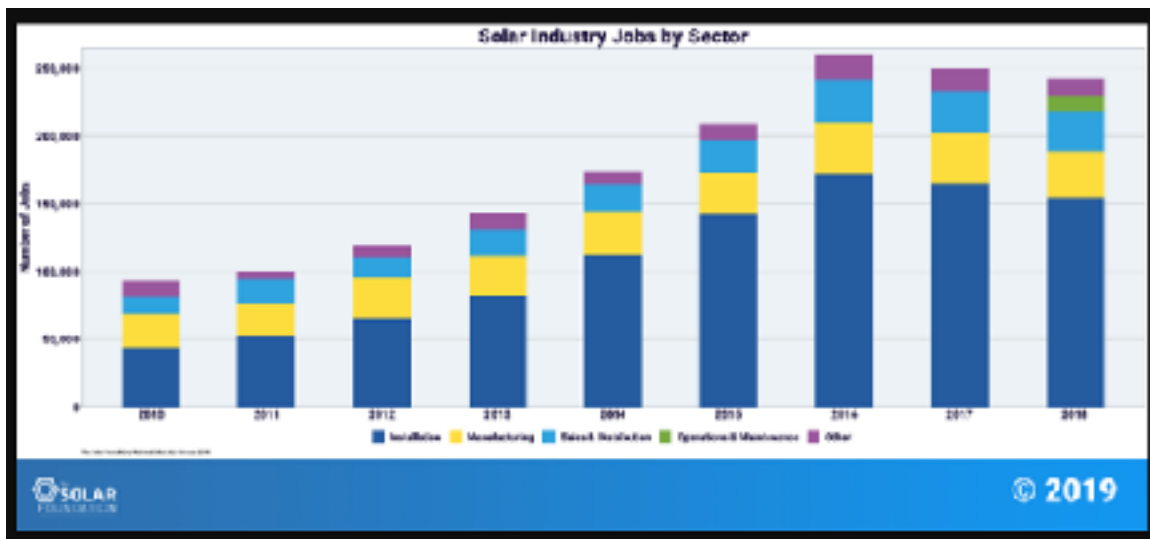


the future.

Top Solar Panel Manufacturers in 2019

RANK	COMPANY	HEADQUARTERS
1	JinkoSolar	China
2	JA Solar	China
3	Tina Solar	China
4	LONGi Solar	China
5	Canadian Solar	Canada
6	Hanwha Q-CELLS	South Korea
7	Risen Energy	China
8	GCL SI	Hong Kong
9	Totusun	China
10	First Solar	USA

The demand for solar panels has skyrocketed over the years as everyone is becoming more and more eager to get in on solar energy into as many parts of their lives. This solar craze has led to people and companies creating an explosion in demand for solar panels. However, this demand for solar panels has only affected the need for solar installers and operations and Maintenance. The amount of manufacturing in solar has stayed relatively stagnant in the united states as many of the world’s largest solar manufacturers are Chinese based companies. However, many Chinese based solar panel companies have been scrutinized in the past. For a variety of complaints about their construction and material used. Therefore, bringing more solar manufacturing to the United States would better the solar market and would increase the ability of high-quality solar panels.

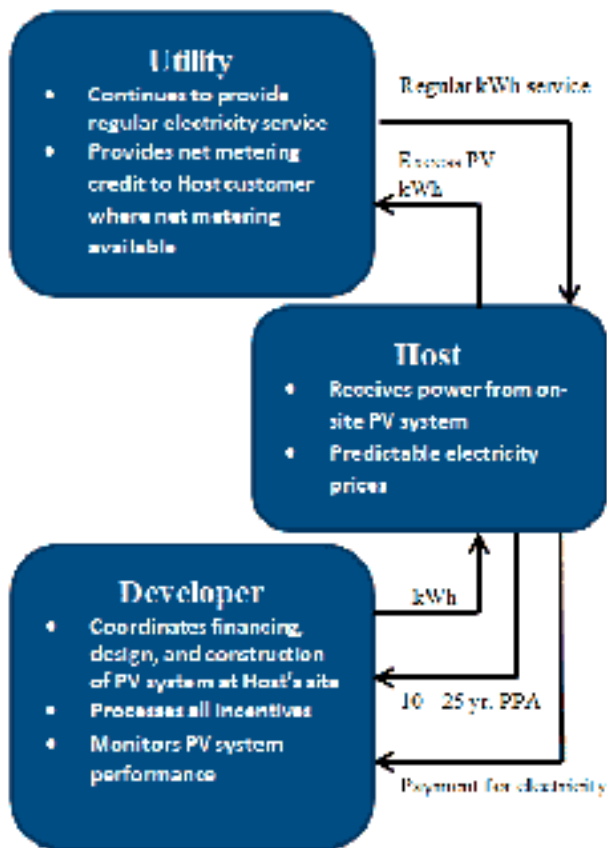


Although solar power can only be generated during the day, it does, however, with improvements to large scale batteries, solar energy may soon reach the point of powering

the world. Battery Storage systems have become more popular with people at home and in small businesses as It allows for energy to be stored and used at night. This change means that solar power can be stored for use at night, which intern allows for this energy to be used whenever necessary rather than being sold back to the grid during the day. An increase in solar markets means that there will be less of a demand for fossil fuels and a broader market for solar panels.

Power Purchase Agreements

Power Purchase Agreements (PPA) creates a contract between an electricity generating company and a power purchaser. These types of arrangements are often created for the sale of renewable electricity between these two parties. A project can be used for both the installation of a solar field or the purchasing of power form a pre-existing one. With the electricity being grid delivered to the buyer or installation on site. PPA's are currently very popular amongst large tech companies.



These agreements mean that electric generation companies essentially rent solar fields to other companies for a period of time. Afterward, the companies have the option to purchase the solar domain or continue with the PPA. PPA's are the dominant form of agreement between most large companies and power companies. This allows companies to invest in solar panels without taking on the liability for installing and maintaining the panels; this allows both companies to invest in solar energy while also driving the demand for the production of solar power up from where it used to be.

Companies partnerships

As the threat of global warming and mounting pressure from younger generations, a substantial number of companies have been on a path to becoming carbon neutral. This is defined as “counterbalancing the emission of carbon dioxide with carbon offsets,” which allow a company to continue to operate efficiently even if they are not directly producing carbon emissions or take measures to create an equal counter to their current carbon productions. Although not all companies are going completely neutral as some companies have instead opted to reduce their carbon footprint instead while running off completely.

GOOGLE

Google is one of the many tech companies to commit and become carbon neutral. “In 2007, Google committed to carbon neutrality – a goal it has met every year since – and in 2010, the company entered into its first power purchase agreement (PPA) to buy renewable energy. In 2012, they increased their ambition with a commitment to purchase enough renewable energy to match 100% of Google’s operational electricity consumption” (Google: From carbon. 2018). Google has met this goal in 2017 and has continued to work towards making this goal every year. This means that for each new facility that is opened, Google must continue to create renewable energy to power its facilities.

FACEBOOK

Although Facebook is not quite at 100% renewable energy, it, like many other companies, is working tirelessly to getting to a 100% renewable energy. Currently, at a respectable 75% renewable, the still-growing companies' commitment to using renewable energy. There has been a sizable focus on purchasing solar energy as one of the primary producers of energy. With the addition of its new data center in New Albany, Ohio, which will also be powered by the solar field that is nearby, the need for more solar during growth is evident.

AMAZON

Amazon is another technology giant that has invested in solar in various forms around the country. The company has created multiple solar farms in its effort to get closer to becoming 100% renewable. Amazon has the furthest to go in terms of becoming fully renewable, with it only just having hit the fifty percent mark last year. However, this is expected to grow as the company pushes towards 100%.

Conclusion

Solar Power has become integral to the powering of both today and the future. With the United States alone, solar capacity is likely to double in the next five years. Furthermore, as solar energy continues to grow in popularity and availability, it is no doubt that solar energy will become the industry to continue to grow for a long time afterward.

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