How is Solar Power Beneficial to our Environment & Economy?

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What is Solar Power?

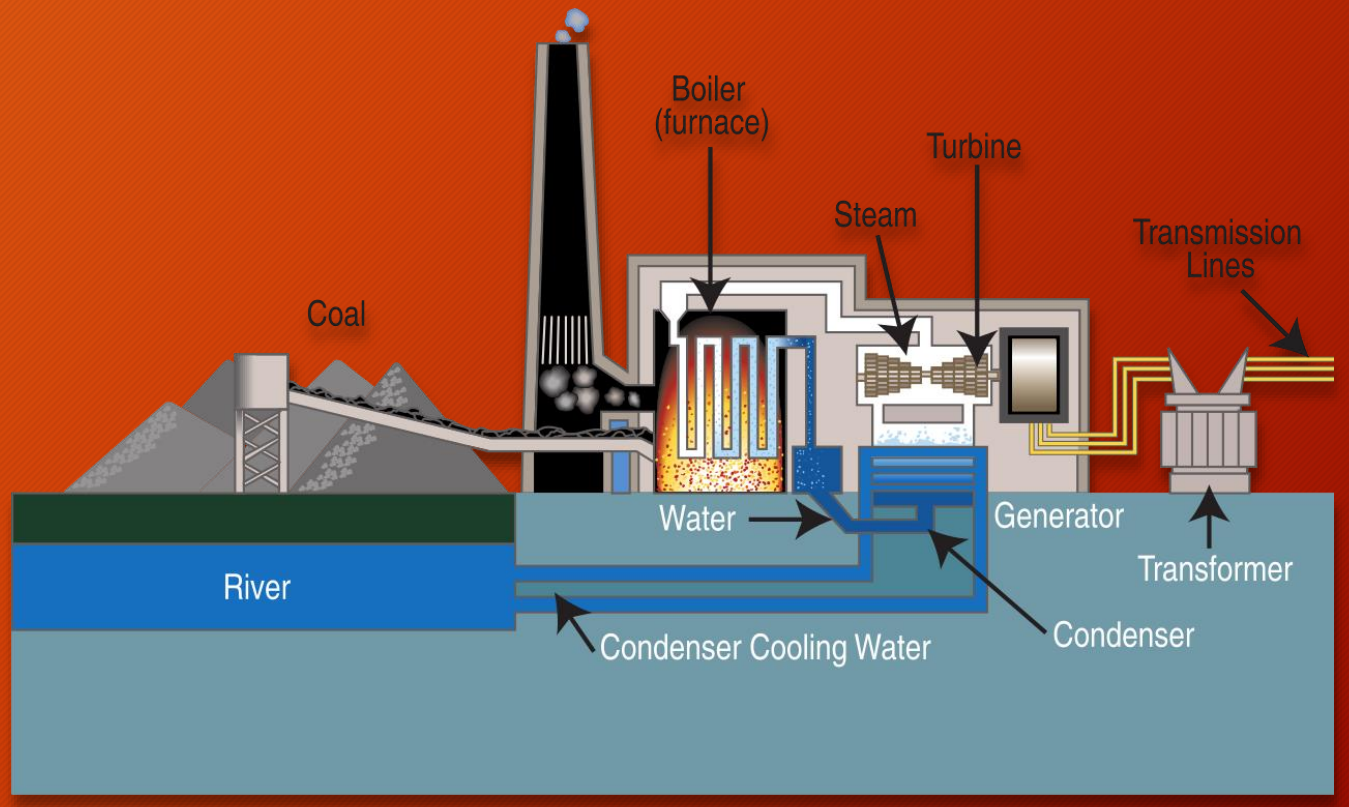
- It is energy taken from the sun in the form of solar radiation
- Technology used to get solar energy are concentrated solar power, photovoltaic systems, and solar water heating
- Was found in 1839 by French scientist Edmond Becquerel
- It is a clean, sustainable and reusable resource that does not dissipate any harmful things into the air
- According to solarreviews.com, “Solar energy is energy which is created from either the irradiation or heat energy within the sunlight radiated from the sun. Solar power is captured when energy from the sun is converted into electricity or used to heat air, water, or other fluids.” (Sendy, 2016)
- Fun Fact: According to the Union of Concerned Scientists, Just 18 days of sunshine on Earth contains the same amount of energy as is stored in ALL of the planet’s reserves of coal, oil, and natural gas. (Atchue, 2011)

Solar Power Reduces Air Pollution

- Solar energy can drastically reduce air pollution
- According to EcoMarkSolar, about 31 percent of greenhouse gas emissions in the United States comes from electricity production. (EcoMarkSolar, 2016)
- Greenhouse gases is the cause of increases of weather(global warming) and decreases in air quality due to the use of methane and carbon dioxide emissions (EcoMarkSolar, 2016)
- If we replace traditional electricity production with solar energy we can cut down on greenhouse gas emissions and global warming

Solar Power Reduces Water Pollution

- Another Benefit from solar energy is how it can reduce water pollution
- Solar energy does not rely on water cooling to create power unlike thermoelectric plants that do.
- This can lead to more clean water and river ecosystems
- The use of solar energy can lead to a decrease in cancer and heart attacks due to no toxic pollutions being emitted into the air
- Solar energy can reduce hazardous waste such as radioactive waste due to the fact that solar energy does not require any fossil fuel

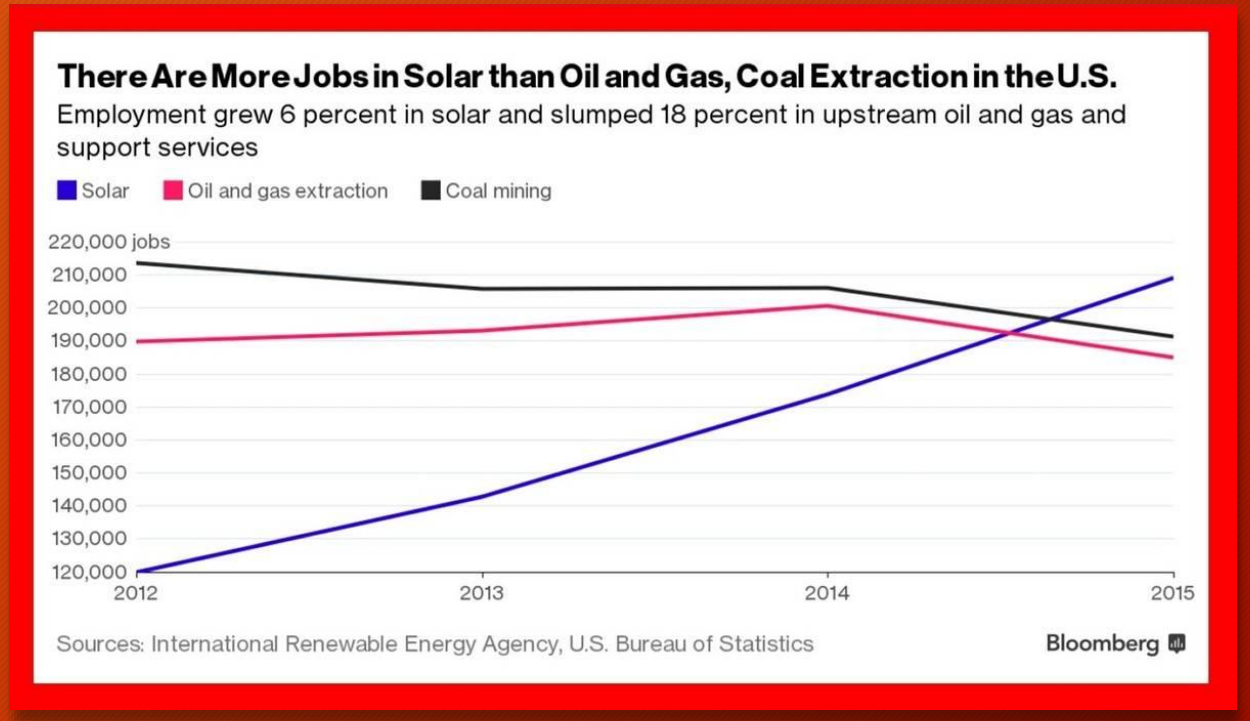


Solar Reduces The Need For Finite Resources

- Unlike other forms of producing electricity and power, solar energy has INFINITE resources due to its main supplier being the Sun (unless it explodes, then bye bye we go)
- Yes, other resource to create panels are not infinite but we do still have a great amount of
- Also these resources are not toxic to the environment or our health
- They are also reusable and sustainable as stated before
- (www.darvill.clara.net. 2016)

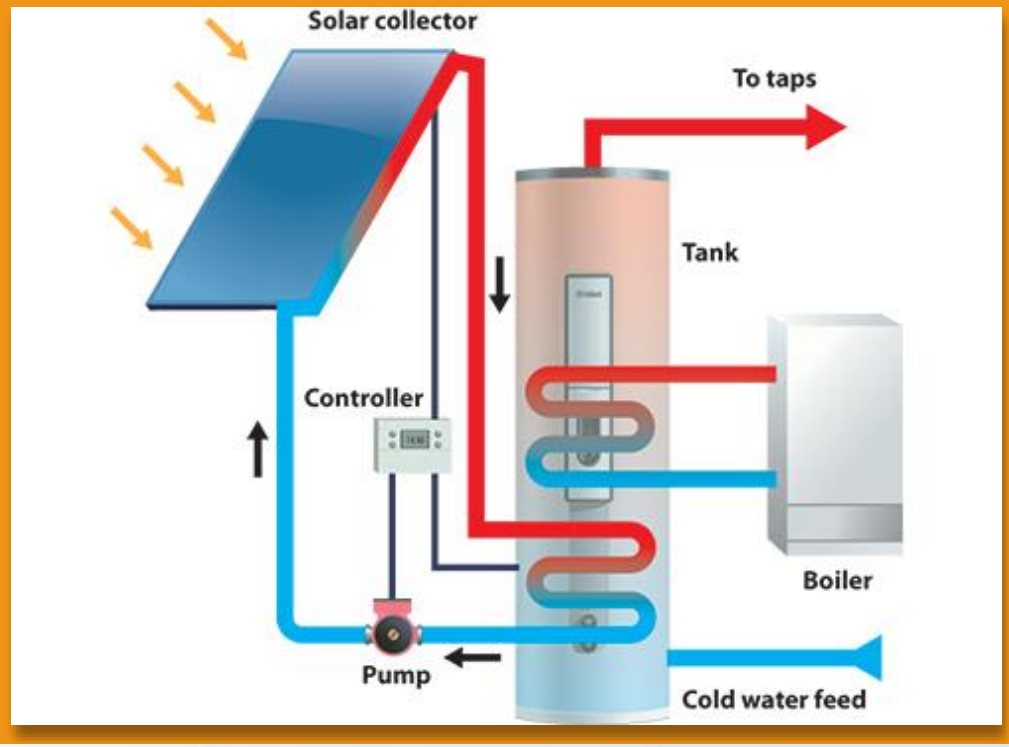
Economic Benefits of Solar Power

- According to Ipeck from the S.U.N report, the solar industry added 35,000 jobs in 2015. This is 20% more than the previous year. (Ipeck, 2011)
- It also states oil and gas firms has lost 17000 jobs and their prices continue to go down. (Ipeck, 2011)
- According to Renewable Energy Cooperation the Homeowner advantages are (2017):
  - Lower your electric bills.
  - Net metering allows you to sell your excess electricity to the utility company for even lower energy bills!
  - Increase your home's resale value.
  - Take advantage of tax credits from the federal and state government.



Examples of Solar Power

- A Solar Boiler
  - This uses the panels to heat up the water pipes, minimizing the use of gas boilers (gas boilers would be used as a back up)



Examples of Solar Power

- A Solar Furnace
  - uses the curved mirrors to focus the Sun’s energy into a small area
- This specific furnace is in Odiello, France and can reach temperatures of 3000 Celsius

Solar Power in New York City

- Brooklyn Navy Yard
  - Solar power used on the steep lamps in the yard to provide lamps with their own source of energy.
  - According to the an article in the Daily News, “The solar farm is one of the largest in the city and is expected to generate 1.1 million kilowatt hours of power - enough to power 88 homes and reduce carbon dioxide emissions by about 1.4 million pounds annually.” (Blain, 2016)

Future of Solar Power

- MIT researchers are predicting that solar power has the potential to generate multi-terawatt(10^12 watts) scale power. Today's largest solar farm has a 550 megawatt(10^6) capacity
- As prices are dropping for solar panels , more people are purchasing and investing
- Experiments have been done with Bacteria (cyanobacteria) which can help power wireless devices
- Since solar power requires a lot of space, Solar power can play a big role in real estate

References

- Atchue, S. (2016, May 03). What Are the Economic Benefits of Solar Power? Retrieved May 23, 2017, from https://sunworksusa.com/blog/what-are-the-economic-benefits-of-solar-power/
- Blain, G. (2016, September 26). Cutting-edge solar panels at Brooklyn Navy Yard. Retrieved May 23, 2017, from http://www.nydailynews.com/new-york/brooklyn/cutting-edge-solar-panels-brooklyn-navy-yard-article-1.2806025
- Ipeck. (2011, December 9). How Solar Energy Impacts the Economy. Retrieved May 23, 2017, from https://www.solarenergyworld.com/2011/12/09/how-solar-energy-impacts-the-economy/
- Sendy, A. (1970, July 26). Solar Power Facts. Retrieved May 23, 2017, from http://www.solarreviews.com/solar-power/going-solar-faqs/
- Unknown. (2016, April 20). Energy Resources: Solar power. Retrieved May 23, 2017, from http://www.darvill.clara.net/altenerg/solar.htm
- Unknown. (2016, January 8). How Does Solar Energy Help the Environment? Retrieved May 23, 2017, from https://ecomarksolar.com/blog/how-denver-solar-panels-help-environment/
- Unknown. (2017). Economic Benefits. Retrieved May 23, 2017, from https://www.renewableenergysolar.net/benefits/economic-benefits/