

Team Name: Sustainable Urban Pioneers

Name: Lauren Kim, Yale University
Jinno Vicencio, Orange Coast College

Email Address: lkim97@gmail.com

Username: lkim97

I made an infographic comparing the pros and cons of three different renewable energy sources, solar energy, wave energy, and wind energy.

Wave Energy (or Tidal Power)

Pros: Renewable, Emission Free, very high efficiency, more of a predictable output, the environmental impacts are localized and not globalized, requires no fuel, can produce a large amount of energy, reliable and long-lasting as a plant, once constructed can last for about 100 years

Cons: Need of large scale infrastructure, which is often extremely expensive to construct, very location specific (only 20 sites have really been identified with high potential), locations are often remote, there are impacts on surrounding fish, marine mammals, and birds, normal tidal cycles are affected

Wind Energy

Pros: Clean, renewable, and relatively cheap, power is essentially free once the infrastructure has been paid for, can be used almost anywhere

Cons: Local disadvantages like land use problems, noise and visual pollution, wind doesn't blow consistently or steadily, wildlife impacts (some birds and bats have experienced fatalities)

Solar Energy

Pros: Clean energy, no greenhouse gas emission or combustion, solar energy is available nearly everywhere, there is a good foundation and basis of technology, power generation is silent, no noise or pollution, little to no maintenance once constructed

Cons: Not available at night or when there is no sun available, large storage costs, need for a large amount of open space, relatively low efficiency (although is improving), fragile materials, some people might not like the aesthetics of solar panels

I believe that the most sustainable long-term solution is solar energy. I think that the technology for solar energy has been developing for such a long time that we will be able to increase the efficiency of solar energy technology. I think that the cons of solar energy are not as harmful as the cons of other forms of energy. I think the fact that tidal energy and wind energy hurt wildlife and other animals could upset certain groups of people, solar energy is relatively less controversial. This is a source of energy that we need to continue working on improving efficiency and lowering technology costs. If so, I believe that solar energy has the greatest potential to get out and benefit the greatest amount of people in the shortest amount of time.

I am really inspired by the different designs that people are working on in regards to wind energy. People are inventing lateral axis wind turbine, wind turbine trees (see my screenshot below), and other forms of more aesthetically pleasing energy sources. I think that wind power has a great potential to be used in a wide variety of areas. These new designs are more aesthetically satisfying and can serve as an important educational tool for people who live in the city that might be very distanced from nature and where their energy comes from. One of the cons that I researched said that wind power is not aesthetically pleasing, and people were not satisfied with the design of the turbines. These new designs address these complaints and I feel that more people will be interested in pursuing wind energy projects in their cities.

Additionally, I think these renewable sources should be used in tandem with each other. I don't think that one renewable system alone can produce enough energy to sustain our world. I think that we need to account for the weaknesses of one system by using others and take full advantage of the renewable resources we have to produce energy.

Screenshot:



k-lo 
@lkim97



New Wind is installing tree-shaped wind turbines in France. This creative source are job-creating, good for the environment, and sustainable





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alternative-energy-news.info/tree-shaped-wi...





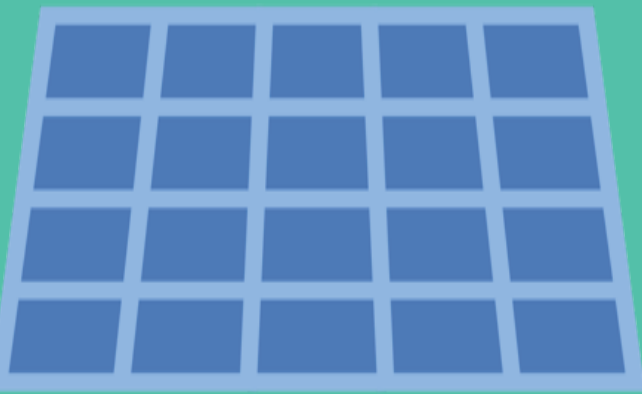
SOLAR

PROS

- No Greenhouse Gas emissions or combustion
- Available nearly everywhere
- Good foundation and basis of technology
- Power generation is silent
- No noise or pollution

CONS

- Not available at night or when there is no sun
- Large storage costs
- Need for a large amount of open space
- Relatively low efficiency



WAVE

PROS

- Very high efficiency
- Predictable output
- Requires no fuel
- Reliable and long-lasting as a plant

CONS

- Need for large-scale infrastructure
- Can be extremely expensive to construct
- Very location specific
(very few locations have been identified with high potential)
- Impacts on surrounding fish, marine mammals, and birds



Lauren Kim, Jinno Vicencio, Sustainable Urban Pioneers



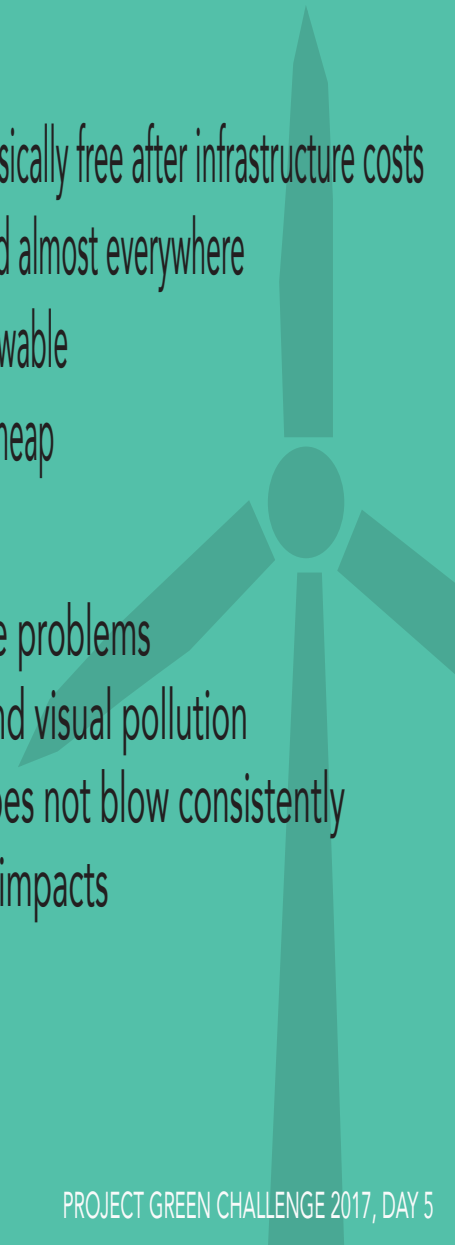
WIND

PROS

- Power is basically free after infrastructure costs
- Can be used almost everywhere
- Clean, renewable
- Relatively cheap

CONS

- Land use problems
- Noise and visual pollution
- Wind does not blow consistently
- Wildlife impacts



PROJECT GREEN CHALLENGE 2017, DAY 5