

Our Energy Future

Renewable Energy

At this point, you have a good appreciation for the HUGE role that energy plays in our society.

As scientists, we need to be smart about the technical aspects of energy and how to best develop technology. There's no doubt that fossil fuels were a big factor in making your life as sophisticated as it is. Given that, we need to be intelligent as we evolve our sources of energy.



Renewable Energy Explained: <https://youtu.be/KEeH4EniM3E>

The Big Challenge

Three quarters of the world's energy is currently being generated by burning fossil fuels. Changing is going to require good scientists and a determined population (who will push for policy changes).



Bill Nye talks about what global warming is. <https://youtu.be/grI3BDSGEC4>



What is renewable energy? <https://youtu.be/T4xKThjcKaE>

Solar Energy

Let's talk solar energy!



These videos give a brief description of how solar energy works. <https://youtu.be/yFwGpiCs3ss>

Lots of Solar Energy!

Enough sunlight reaches the earth's surface each minute to satisfy the world's energy demands—for an entire year.

Wind Energy

Let's talk wind energy! How does it work, and what are the positives and negatives of this technology? Are there strategies being used in the field that mitigate the negatives?



Wind Power 101 <https://youtu.be/Z5c50-hcD0>



World's Largest Windfarm

The world's largest wind farm is the Horse Hollow Wind Energy Center near Abilene, Texas. Covering 92 square miles, the center has more than 400 turbines that are 262 feet tall. They produce 735 megawatts of electricity.

Hydro Energy

Hydro electricity utilizes the kinetic energy of flowing water to turn a turbine, generating electricity.



Hydro Power 101: <https://youtu.be/q8HmRLCgDAI>

World's Largest Hydroelectric Project

The most powerful hydroelectric project in the world is China's Three Gorges Dam. The controversial and enormous power plant brings power to millions of Chinese villagers and will generate more than 22,000 megawatts from six generators.

Your Footprint

As mentioned, scientists and engineers are working hard to evolve our sources of energy.

Given that, as an energy consumer, you are definitely part of the solution.

The impact you have on our planet with your lifestyle can be called your "footprint" (referred to as "energy footprint," "carbon footprint," "ecological footprint," or "environmental footprint.")

Leaving a big footprint means that your lifestyle leaves the Earth significantly worse off. To have a small "footprint" means that you don't negatively impact the Earth's resources as much.



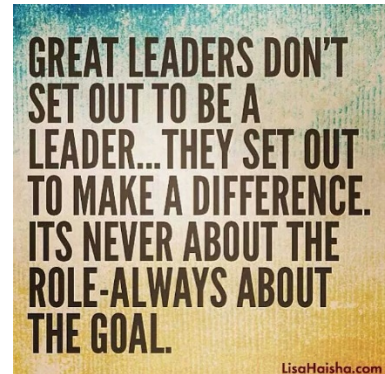
Let's Reduce Our Environmental Footprint!: <https://youtu.be/p9cCFBcVRO4>

Our Future

Climate change is real. The energy crisis is now. It's up to us. How will you act? What conversations will you have? Will you take up the challenge of preserving our Earth?



The Student Energy Movement: <https://youtu.be/oRwY27yvqFI>



Interview

As with the other sections, let's finish off this section by taking another look at careers in science and engineering.

What do physicists, technologists, and engineers do? Here's an example.



Inspiring the Next Generation of Female Engineers: <https://youtu.be/FEeTLopLkEo>

Our Energy Future

1. We get most of our energy from _____, _____, and _____.
2. Renewable energy means the energy derived from sources that do not _____ or can be replenished in a humans life span.
3. What are 4 types of renewable energies:
 4. Solar energy uses _____ to create energy.
 5. Wind energy is created by using the air motion and converting it to _____.
 6. We use _____ to collect air energy.
 7. The worlds largest wind farm is in _____.
 8. Hyrdoelectricity is the conversion of _____ to electricity.
 9. What are the two types of hyrdoelectricity production?
 - a.
 - b.
10. The impact you have on the environement is called your “_____.”
11. If you have a small footprint you have a _____ impact on the environment.
12. If all humans had footprints like yours we would need _____ Earths.