ENERGY RESOURCES

A **resource** is a supply of something that will meet someone's need. When we talk about energy resources, we are discussing those materials and events that can produce energy and thus become a resource to humans.

Two kinds of energy resources: renewable and nonrenewable.

A **renewable resource** is a resource that can be naturally restored or at least replenished as it is needed. So a renewable resource must be produced in a relatively short time, such as solar energy, which can become available as a resource whenever the sunlight shines on the earth.

A **nonrenewable resource** is a resource that can't be replaced or restored a longer to replace tha s longer than your coal to produce he t be produced i

Lesson C newable

Let's look at some nonrenewable resources:

Fossil Fuels

Fossil fuels are energy sources that are made from plants and animals that died a LONG time ago and were buried under layers of the earth. The heat and pressure caused from being buried under layers and layers of earth changed the dead material into oil, natural gas, and coal.

Crude Oil

Type of resource:	nonrenewable resource
Where it is found:	beneath the Earth's surface and below the ocean floor
What it is used for:	gasoline, diesel fuel, and other fuels
What it is used to make:	plastic, asphalt, grease, wax

Natural Gas

Type of resource:	nonrenewable resource
Where it is found:	in the ground
What it is used for:	cooking, for heat, and in power plants to make electricity
Interesting fact:	Natural gas is flammable, but has no odor, so it's mixed with a chemical that makes it smell like rotten eggs so people can tell if there's a natural gas leak!

Coal

Type of resource:	nonrenewable resource
Where it is found:	beneath the surface of the earth, at different depths
What it is used for:	Power plants burn the coal to create electricity

Lesson Checkpoint: What is crude oil used for?

Advanta

Let's look

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- We a ... fuels (whi
- Fossil fuel power plants are very reliable.
- Fossil-fuel plants can be built almost anywhere.

Now for the disadvantages…

- Two words: AIR POLLUTION, caused when we burn these fuels. This is the biggest disadvantage of fossil fuels.
- Another crucial disadvantage is the fact that they are **not renewable!**

So with these disadvantages in mind, we need to find alternative choices!

What are some alternative energy resources?

The power of WIND
We can use WIND to create electricity! A windmill is moved by the wind which then turns a turbine. The turbine runs a generator that makes electricity. The more wind, the more electricity is created.

Advantage: no air pollution
Disadvantage: wind does not blow all the time (no wind = no electricity)

The powe
Hydroelect icity.
Rushing w ctricity.

Advantages: no air pollution and its renewable
Disadvantage: hydroelectric plants can only be built where there is a large amount of rushing water

The power of the SUN
Solar energy is energy we get from the Sun. **Solar cells** are devices made to convert sunlight into electricity.

Advantages: no air pollution and its renewable
Disadvantages: sun does not shine all the time (no sun = no electricity), it is expensive, and A LOT of solar panels are needed to create electricity

The power of the EARTH

Geothermal energy is heat from the earth.
(geo = earth and thermal = heat)
A geothermal type heating system has pipes buried beneath the ground and uses the earth's heat to buildings.

Advantage: no pollution
Disadvantage: Geothermal power plants can only create electricity from hydrothermal energy found only around areas where volcanoes and earthquakes occur.

The Energy of TRASH?

Biomass includes material or materials from organisms that was once alive – plants and trees, animal waste, and food waste. Garbage is burned to create electricity.

Advantages: helps eliminates garbage (less in landfills) and it's renewable
Disadvantage: causes air pollution when burned

Lesson Checkpoint: What is one energy resource that does NOT create pollution?