



## Electricity for Electric Cars

coal, power plant, emissions, alternative fuel

Human Impact Unit

Let's face it. Most cars are rude. They are noisy, smelly, and they let out gases into the air that might change the Earth. They also hit people sometimes. Lucky for us, scientists are working on making cars nicer. See, one of the main reasons cars are so bad is that they run on gas. This means they need a loud rumbling engine and the stuff that comes out is not good for our noses or the air we breathe. Cars must become less rude if we are going to keep Earth healthy. That's why more and more cars are running on electricity, which is quiet and clean. Let's look at what it takes to make a car nicer.

We use gas to make cars move when we light it on fire and sending heat through pistons that move back and forth and make the wheels spin. This is what makes cars so loud and . . . gassy. So we are going to take all of the pipes that carry the fuel and gases through the car and toss them out. We need something new in there. The main thing we use to make our cars move right now is gasoline, but we are looking for other ways to make them move. An **alternative fuel** is an energy source that is different from what we use now. So instead of pipes, what can we put in these cars that might make them nicer? Wires!

Wait, where are we going to get electricity for these wires? Of course, all energy comes from somewhere. We cannot just make it out of nothing. We won't get enough energy from rubbing our socks on the carpet or leaving it out in the sun for a day. Where will it come from? The gas that used to run this car, before we took out its pipes, came from pools of oil found deep under the Earth's surface. This oil is from organisms that lived a very long time ago and broke down into the stuff we use to make our cars move. Believe it or not, the stuff we use to make a lot of our electricity is not much different. **Coal** is called a fossil fuel that we find as black rocks and comes from inside the Earth. Many places where we make electricity are changing this stuff into electricity we can send through wires. Hmm . . . does anyone know how to turn this chalky black stuff into bright, blue electricity? Let's go ask the people in that building with a lot of smoke coming

out of it over there . . .

A lot of the U.S.'s electricity comes from coal. We can find out how that works by going inside this building that has so much black smoke coming out of it, it looks like it's on fire (but actually is not). A **power plant** is a building where we turn coal or other things are turned in electricity and prepared for people and buildings to use it. It's a very easy process. The coal is smashed up into dust and then burned to warm up water. The water becomes steam, which moves up and spins this turbine (which looks like a big fan), to make electricity. Let's plug in our car! Is it going to make a RRRRUMMMRUUUMMMRUMMMRUMMM like the cars that run on gas do? Let's see . . . Rrrrrmmmmmmmmmmmm.

Did we fix the problem? Yes! This car is a lot nicer! It makes almost no sound as it starts up and drives down the road and it doesn't have that gassy smell! Yes! How's our air doing? . . . Bad? Why bad?!

Didn't we fix the problems? Not all of them. **Emissions** are what is left over when a car or factory changes coal or gas into electricity or movement. One of the bad things about the old cars was that they were changing the environment with the gases they let out. It might seem like we fixed the problem by making this car run on electricity, but . . . remember our power plant that looked like it was on fire? Now all of the bad gases are just pouring out of there instead . . .

Well, this is a step in the right direction, at least. When trying to make cars nicer, we need to look for alternative fuels. One of the most promising is electricity because it's quiet and it doesn't smell bad when you use it. We get it from power plants that burn coal to heat water and change that heat into electricity. The problem is that these power plants have emissions of their own, putting out a lot of the same gases that cars put out. Even though our cars have become a nicer, that building has become rude enough to make up for all of them. Hmm. What should we try next?

### **References:**

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