

## Natural Resources Line of Inquiry

### Lesson 3

#### Hydrogen as an Alternative Fuel - CCRS Level D

Cars usually run on gas, but that might soon change. Relying only on one fuel, like gas, can be tricky because its price varies, and it is not great for the environment in the long run. To tackle these issues, the car industry has started looking into other fuels. One option is hydrogen, which began getting attention in the early 2000s. Hydrogen can power cars using something called fuel cells, which make electricity for the car motors (Eberle and von Helmholtz, 2010; Crabtree, Dresselhaus, & Buchanan, 2004).

Hydrogen has some great benefits. First, it is very efficient—up to 50% for fuel cells and up to 90% efficiency for electric motors in cars. That is much better than the 25% efficiency of regular car engines. Second, it helps us use less foreign oil because we can make hydrogen from things like natural gas or renewables for example, sunlight breaking down water. Third, when a hydrogen car runs, it only makes harmless things like water and a little heat, but making hydrogen in the first place might have some negative effects on the environment.

The idea of cars running on hydrogen remains strong. However, there are still some big challenges to solve. Examples include storing more hydrogen in vehicles, finding inexpensive ways to harness the energy produced in fuel cells, and producing hydrogen from renewable resources (Crabtree & Dresselhaus, 2008). Many scientists and car companies see potential in using hydrogen for cars instead of gas. It could be the fuel of the future.

Adapted from:

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