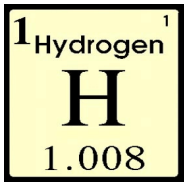
Hydrogen and Fuel Cells

Impact on South Carolina's Economy



Hydrogen and fuel cells have the potential to revolutionize the way the world views, produces, and uses energy. To date, hydrogen has been used to power cell phones to space shuttles, and everything in between.

At room temperature, hydrogen is:

- the simplest, most abundant element
- lighter than air
- colorless
- odorless
- nontoxic
- more energy per weight than any other energy carrier
- more efficient than current fuels used in transportation

The only byproducts of Hydrogen Fuel Cells are water vapor, electricity, and heat…translating to **Zero Carbon Emissions!**

Economy

South Carolina has a 50-year head start on hydrogen and fuel cell research, which means we are uniquely positioned to capitalize on these efforts to create jobs, increase capital investment for our citizens, and become a hub for hydrogen deployment worldwide.

Environment

Hydrogen fuel cells have the potential to reduce greenhouse gas and carbon emissions. Most hydrogen is currently produced from natural gas but will be increasingly made from renewable alternatives such as solar power, wind, and biomass.

Independence

Regardless of one's political affiliations, everyone can agree that reliance on foreign oil is a threat to our national and economic security.

With all the hydrogen expertise in South Carolina, we have the ability to shift our nation's energy focus to one that is locally produced and capitalizes on existing assets.

Applications

Though many only envision hydrogen fuel cells used in transportation, the technology isn't just for cars and buses.

Other applications include:

- Portable (fuel cell power packs for cameras)
- Off-road (forklifts or Segways)
- Stationary (powers homes and businesses)

Each of these applications are all economically feasible near-term uses while the fueling infrastructure and storage technology continue to develop. Many of these technologies are developing in our state. The Aiken, S.C. based Savannah River National Laboratory and the Center for Hydrogen Research are both exploring hydrogen storage technologies.

University of South Carolina professors recently enhanced a Segway personal transport that operates for approximately 4 hours on a battery charge to operate for more than 8 hours with a supplemental hydrogen fuel cell.

Hydrogen fuel cell forklifts have been deployed across South Carolina. These forklifts could previously only operate for brief shifts before requiring recharging. With the addition of a hydrogen fuel cell, they are able to operate for nearly 24 hours, increasing efficiency and significantly reducing the time required to recharge.

South Carolina has become a national and international leader for Hydrogen and our reputation is attracting companies to relocate or expand their services here.

South Carolina Hydrogen and Fuel Cell Alliance
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