Fuel cell benefits and challenges

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Gasoline- and diesel-powered vehicles emit greenhouse gases (GHGs), mostly carbon dioxide (CO 2), that contribute to climate change. Fuel cell vehicles (FCVs) powered by pure hydrogen emit no tailpipe GHGs, only heat and water. Producing the hydrogen for FCVs can generate GHGs, depending on the production method.

Fuel cell stationary applications clearly have a demand, and it is developing. The main challenge for high-level applications is that the cost objectives should be prioritized to achieve mass-market success. Additionally, the choice of market and marketing strategy plays a vital role in identifying deployment opportunities.

Benefits and Disadvantages. Advantages: More detailed information is available in the applications section, which offers information specific to each industry. High Efficiency- when utilizing co-generation, fuel cells can attain over 80% energy efficiency. Good reliability- quality of power provided does not degrade over time.

Hydrogen fuel cells offer numerous benefits over traditional backup power solutions, such as reliability, sustainability, energy independence, scalability, and longevity.

The change in focus from light- to heavy-duty vehicles exacerbates durability and efficiency challenges for fuel cells, necessitating material and system innovations that enable new classes...

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