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### **Frontiers, Opportunities and Challenges for a Hydrogen Economy**

JOHN TURNER, National Renewable Energy Laboratory

Energy carriers are the staple for powering the society we live in. Coal, oil, natural gas, gasoline and diesel all carry energy in chemical bonds, used in almost all areas of our civilization. But these carriers have a limited-use lifetime on this planet. They are finite, contribute to climate change and carry significant geopolitical issues. If mankind is to maintain and grow our societies, new energy carriers must be developed and deployed into our energy infrastructure. Hydrogen is the simplest of all the energy carriers and when refined from water using renewable energies like solar and wind, represents a sustainable energy carrier, viable for millennia to come. This talk will discuss the challenges for sustainable production of hydrogen, along with the promise and possible pathways for implementing hydrogen into our energy infrastructure.