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Thermal Hydrogen: An Emissions Free Hydrocarbon Economy

Thermal Hydrogen is an emissions free energy system where hydrogen is produced from water splitting and the residual oxygen utilized to produce electricity or hydrogen from hydrocarbons. The purpose of hydrogen is to meet the energy services currently provided by hydrocarbon energy carriers, and the purpose of oxygen is to pre-empt the most expensive part of Carbon Capture and Sequestration (CCS), on-site gas separation. Oxygen also enables simpler and more efficient thermodynamic cycles and this further reduces the costs of hydrocarbon based electricity and hydrogen production. The economic competitiveness of Thermal Hydrogen processes is quantified against other transportation and electricity options. Also examined are the wide variety of supply side options enabled by Thermal Hydrogen as well as the reduction in system redundancy enabled by a storable, portable, low carbon energy carrier.

Bio

Jared Moore is an independent consultant based out of Washington, D.C., and his practice is focused on technology and policy related to deep decarbonization of the energy sector. Jared's research philosophy is centered on the idea that accurate assessment of new technologies and policies requires system-wide, grid-scale analysis. Using this broad approach, Jared invented and developed an emissions free energy economy named Thermal Hydrogen. He has published in multiple peer reviewed journals and is also a contributing author of the book *Variable Renewable Energy and the Electricity Grid*. Over his career, Jared has consulted a wide variety of clients including the DOE, technology startups, venture capitalists, utilities, oil companies, financial companies, advocacy organizations, and foreign governments. He holds a B.S. in Mechanical Engineering from Rose-Hulman Institute of Technology and a Ph.D. in Engineering and Public Policy from Carnegie Mellon University.

Carnegie Mellon University

Center for Climate and Energy Decision Making Seminars



26 Sept. 2016
12:00-1:30pm ET

Wean Hall 3701
Carnegie Mellon University

Lunch will be served at 11:50am.
Seminar is presented under the auspices of CEDM and the department of Engineering and Public Policy.

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