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Review: The Hype About Hydrogen

By Joseph J. Romm

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Joseph J. Romm. *The Hype About Hydrogen*. Washington, DC: Island Press, 2004. 256 pp. ISBN: 1-55963-703-X. US\$ 25.00. (Hardcover). Acid-free Paper.

During Clinton administration the author, Joseph J. Romm, served in various positions in the Department of Energy. Currently he is the Executive Director of the Center for Energy and Climate Solutions, and a Principal with the Capital E Group. He has authored two other useful books: *Cool Companies: How the Best Businesses Boost Profits and Productivity by Cutting Greenhouse Gas Emissions*.

The Hype About Hydrogen describes in detail what is going on in the world of hydrogen. Many as the solution to all our energy problems, both resource-related and environmental ones label hydrogen economy. Romm's position is that we must eventually have a hydrogen economy based on the hydrogen fuel cell, but this cannot be expected to happen soon or without some major technological breakthroughs. He warns that the global warming clock is ticking very fast, and something needs to be done now to avoid a possible catastrophe.

In the introduction to the book, Romm explains what 'Hydrogen Economy' means, how it relates to climate and what is the realistic view about it. The first chapter answers the fundamental question: why do we need hydrogen and why now? The growing energy and environmental risks have prompted us to look toward hydrogen. Fuel cell basics, simplified working principle and different types are described in chapter 2. The following chapter introduces the path to fuel cell commercialization. Hydrogen production is dealt with in chapter 4. Presently steam methane reforming generates about 90 percent of U.S. hydrogen. Other common sources include water, gasoline, methanol, coal and biomass. Electricity generated from nuclear power or renewable energy resources can also be used to produce hydrogen through electrolysis of water. Hydrogen-based transportation systems are discussed in the next chapter. Hydrogen must be liquefied or compressed before it could be used as a transportation fuel. Metal hydrides are another promising solution for hydrogen storage. However, huge infrastructure is needed for nationwide storage and delivery, and there are safety issues as well with hydrogen use. Romm explains the long road to commercialization of fuel cell vehicles in chapter 6. Global warming and climate change issues are discussed in

chapter 7 & 8. The author identifies carbon dioxide emissions into the atmosphere as the primary cause of global warming. The ninth and last chapter is devoted to the description of hydrogen partnerships and pilot projections both on global and national levels, including examples from Iceland and California . The concluding section follows with recommended measures to save our environment.

Some engineering or scientific background is necessary to understand *The Hype About Hydrogen* properly. While the style may not be overly exciting, the book does cover the full range of hydrogen energy issues, and possesses real value to someone who wishes to become well informed about our energy future.

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