

**Florida Hydrogen Energy Initiative:  
Cost-Effective Pollution Prevention and GHG Reduction  
Opportunities**

David E. Bruderly, PE  
President  
Bruderly Engineering Associates, Inc.  
World Hydrogen Energy Conference  
Colorado State University  
September 6, 2000

**ABSTRACT**

Florida is the home of the world's largest hydrogen energy system -- the Space Shuttle. Florida also imports nearly every BTU of transportation fuel (aka petroleum) that drives the economy of this state; more than \$9 billion per year is spent buying fuel from Texas, Venezuela, and other more distant locations. The transport, storage, and combustion of petroleum and coal also creates significant quantities of pollution that fouls our blue skies, waters, and, from time-to-time, our beaches.

Hydrogen energy systems offer society a cost-effective technology transition pathway -- a roadmap -- to a sustainable energy future using renewable and nuclear energy sources, zero-pollution vehicles, and distributed power generation. Several promising zero-emission end use applications using hydrogen fuels and electrochemical fuel cells as well as heat engines and burners are now technically feasible. Even more exciting, the use of hydrogen as the chemical energy carrier of choice also creates many opportunities for widespread commercial deployment of renewable, fossil, and nuclear energy sources in both the United States and developing countries.

I presented these concepts in a paper entitled: "Hydrogen: The Clean Fuel of Tomorrow is Available Today" at the 1990 Air and Waste Management Association Annual meeting. I propose to update the material presented in this paper to reflect the latest developments in technologies and regulatory attitudes.

The paper will present the Florida Hydrogen Energy Initiative -- a roadmap for commercial deployment of zero-pollution hydrogen energy technologies in niche applications throughout Florida. I will suggest hydrogen energy projects that can be integrated into government and corporate pollution prevention and Greenhouse Gas (GHG) reduction policies, strategies and programs. Policies to encourage deployment of zero-pollution and zero-GHG hydrogen energy systems will also be discussed.