

NHA NEWS

Hydrogen Energy Challenges to Perception and Progress Toward Acceptance



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The U.S. Department of Energy's Hydrogen Program faces a number of unique challenges in the deployment of hydrogen technologies. While focusing on long-term, renewable-based hydrogen systems for a sustainable future, near-term issues arise. Will hydrogen be integrated into our energy infrastructure early in the new millennium? Can the public be convinced of the unique benefits of hydrogen as a transportation fuel in light of the Hindenburg and Challenger? Will entrepreneurs with vision and leadership be able to navigate the regulatory and liability labyrinth required to introduce hydrogen technologies into our neighborhoods and onto our streets?

As we prepare for the inevitable but enigmatic transition from fossil fuels to renewables, we face the difficulty of proving the validity of our hypothesis that hydrogen will be a partner with electricity in a sustainable, environmentally friendly, safe, and efficient energy system. We can evaluate the technical aspects of hydrogen systems, but we cannot prove the ultimate value of hydrogen without demonstrating these systems. And we cannot demonstrate hydrogen technologies without addressing public perception, insurance, liability, and regulatory issues.

The DOE Hydrogen Program has made public education a hallmark of its outreach activities. Although this recognition addresses an important aspect of fear of the unknown, it has not yet resulted in widespread acceptance of hydrogen by the general public. DOE is collaborating with the NHA to gain industry's assistance in broadening public acceptance. DOE-sponsored projects in [El Segundo](#) and [Palm Desert](#), California, U.S.A., are cases in point. Clean Air Now! is looking for alternative locations for its PV-electrolysis facility due to a loss of corporate support from Xerox, perhaps due to the hurdles in obtaining continued unlimited liability coverage for the facility.

Public hearings held to address public concerns in Palm Desert were initially dominated by questions about the [Hindenburg](#), the airship that burned in 1937 while landing. Dr. Peter Lehman of Humboldt State University [Arcata, California, U.S.A.] must be congratulated for his forthright and proactive approach to community involvement. Can we all hope to be as successful (and patient!) as Peter?

Although El Segundo and Palm Desert have begun the arduous task of introducing renewable hydrogen systems into our collective energy consciousness, we as a community have many historical barriers to overcome. The starting point is the Palm Desert experience, in conjunction with Clean Air

Now!'s El Segundo demonstration facility. Where do we go from here?

Clearly, a structured approach to hydrogen demonstration project approval is desirable. A consensus document, a [Manual of Recommended Practices](#), has been suggested as a viable interim guidebook for those whose vision contests conventional wisdom. This manual would represent a methodology for applications of the growing body of knowledge on hydrogen systems. A coordinated team could develop a focused, cross-referenced document, with open distribution and application.

Government and industry agree that such a manual must be constructed by an interdisciplinary team of technical, operational, and regulatory specialists. This development team would include committed, recognized experts in the energy/fuels industry (hydrogen, natural gas), professional associations (standards, certification), applied research organizations (technology, safety, analysis), the insurance industry, and government (federal, state, local). The principal leaders for development of "The Manual" will coordinate the collection and correlation of pertinent information into a central database that will serve as the basis for subsequent drafts of the document. Given the depth and breadth of such a manual, it is expected that a sequence of revisions based on a multistep review process will be required.

There is a wealth of information which must be considered, including existing codes and standards for gaseous fuels, standards and practices for the existing hydrogen industry, and state and local regulations. Annotation and cross-referencing of this material is essential to the production of a comprehensive manual.

In our effort to "learn to walk," it is imperative that this public document be accessible; well-documented; supported by industry, researchers, insurers, professional associations, and governments; and that it be revised periodically to incorporate evolving experience and technology development.

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