



Tuesday, January 11, 2005

Dirksen 366 Senate

***Institute of Transportation Studies
University of California, Davis***

AND

California Fuel Cell Partnership

***Moderators: Jerome Hinkle, Office of Senator Byron Dorgan, and
Michael Conschafter, Office of Senator Lindsey Graham***

3:00 pm Introduction and Overview

*Anthony Eggert, Associate Research Director, H2 Pathways
Program, ITS-Davis*

California Fuel Cell Partnership, Recent Activities

*Catherine Dunwoody, Executive Director, California Fuel Cell
Partnership*

Hydrogen Production – Pathways and Strategies

*Joan Ogden, Associate Professor, Environmental Science and
Policy; Co-Director, Hydrogen Pathways Program, ITS-Davis*

Hydrogen Markets – Vehicles and Fuel

Ken Kurani, Research Faculty – Hydrogen Pathways, ITS-Davis

Hydrogen and Fuel Cell Vehicle Policy – Lessons learned

*Dan Sperling, Professor, Civil and Environmental Engineering;
Director, ITS-Davis*

4:30 pm Discussion

All

5:00 pm Adjourn

8:00 pm ITS Davis, TRB Annual Reception

All invited, Room 825, Omni Shoreham, 2500 Calvert Street NW

Catherine Dunwoody



Catherine Dunwoody is the Executive Director of the California Fuel Cell Partnership (CaFCP). She was closely involved with the formation of the CaFCP in 1998, and has played a lead role throughout its history. Catherine is responsible for leading a multi-disciplinary team of industry and government representatives in implementing fuel cell vehicle and hydrogen fueling demonstration projects in California. Prior to working for the CaFCP, she worked for the California Air Resources Board for 14 years, where she managed teams responsible for a variety of activities, ranging from developing stationary source test methods to developing and implementing vehicle regulations. Catherine has a Bachelor of Science degree in Biochemistry from the University of California, Davis.

Abstract of Talk

The California Fuel Cell Partnership: Putting Fuel Cell Vehicles and Hydrogen on the Road in California". The California Fuel Cell Partnership (CaFCP) is a multi-industry and government collaborative that is working to demonstrate fuel cell vehicles and hydrogen fueling in real-world applications in California. Over the past 5 years, the CaFCP members have placed 65 cars, 3 buses and 13 hydrogen fueling stations into service in California. Through 2007, the CaFCP members will place up to 300 fuel cell vehicles and the fueling stations to support them. CaFCP members work together to develop consensus approaches to technical challenges such as vehicle fuel interface, hydrogen quality, facility safety, and station implementation, and to increase public and stakeholder understanding of the fuel cell and hydrogen technology. Governor Schwarzenegger's Hydrogen Highway Network Program, announced in April 2004 and in development over the past 9 months, will promote hydrogen fuel availability in California and enable further success for fuel cell vehicle programs.

Joan M. Ogden



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Dr. Joan Ogden is Associate Professor of Environmental Science and Policy at the University of California, Davis and Co-Director of the Hydrogen Pathway Program at the campus's Institute of Transportation Studies. Her primary research interest is technical and economic assessment of new energy technologies, especially in the areas of alternative fuels, fuel cells, renewable energy and energy conservation. Her recent work centers on the use of hydrogen as an energy carrier, hydrogen infrastructure strategies, and applications of fuel cell technology in transportation and stationary power production. She participated in the U.S. DOE Hydrogen Vision process in 2001, and headed the systems integration team for the National Hydrogen Roadmap in 2002. She is active in the H2A, a group of hydrogen analysts convened by the Department of Energy to develop a consistent framework for analyzing hydrogen systems, and serves on the Blueprint Plan advisory panel for the California Hydrogen Highway Network.

Abstract of Talk

Hydrogen is receiving increased attention worldwide, because it offers perhaps the greatest long-term potential to radically reduce several important societal impacts of fuel use at the same time. Hydrogen could be made from a variety of widely available resources, enabling a diverse supply for the transportation sector. If hydrogen is made from renewables, nuclear energy, or fossil sources with capture and sequestration of carbon, it would be possible to produce and use fuels on a global scale with nearly zero full fuel cycle emissions of greenhouse gases and greatly reduced emissions of air pollutants. Hydrogen also poses the greatest challenges of any alternative fuel: there is an array of technical, economic, infrastructure and societal issues that must be overcome before it could be implemented on a large scale. This talk examines the current status of hydrogen supply technologies, resource issues, possible paths forward and the issues associated with a transition toward large-scale use of hydrogen.

Kenneth Kurani



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Dr. Kurani develops approaches and methods to evaluate user responses to new transportation and information technologies. This research includes activity-based approaches to travel demand applied with interactive stated preference and reflexive survey methodologies. Further, he is exploring how activity-based approaches involve end-users in technology development and policy formation, and ultimately how citizen/consumers can shape efforts to market social and systemic characteristics of transportation and communication networks such as energy efficiency, air quality, safety, and equity. His current research includes the role of fuel economy in household vehicle purchase and use, the relative role of functional and symbolic benefits in markets for hybrid vehicles, and the impact of travel on sensitive environments. His work over the past 20 years includes analyses of consumer response to diesel, compressed natural gas, and electric vehicles.

Abstract of Talk

Past consumer experience and perception of alternative fuel and electric vehicles provides lessons for hydrogen fuel cell vehicles and points to necessary research to bolster prospective markets. A brief overview of consumer response to some pertinent past experiences, e.g., compressed natural gas and electric vehicles, as well as recent markets for hybrid vehicles is provided. This will include an overview of the role of incentives in shaping consumer response to new fuels and vehicles.

Daniel S. Sperling



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Daniel Sperling is founding Director of the Institute of Transportation Studies at the University of California, Davis. He is also Professor of Civil and Environmental Engineering, and Environmental Science and Policy. He has served on numerous National Academies committees, including the committee that authored the February 2004 report on hydrogen, as well as others on Biomass Fuels R&D, Sustainable Transportation, and Highway Financing. He also was the founding chair of the Transportation Research Board committee on Alternative Fuels. He is the author or editor of 170 technical articles and 8 books, including *The Hydrogen Transition* (Elsevier, June 2004), *Future Drive* (1995), and *New Transportation Fuels* (1988).

Dr. Sperling currently co-directs, along with Dr. Joan Ogden, the UC Davis program on Hydrogen Pathways, funded by 15 major energy, automotive, and technology companies, and various government agencies.

Abstract of Talk

The history of alternative fuels is largely a history of failures. Now George W. Bush, California Governor Arnold Schwarzenegger, and many senior automotive and energy executives are issuing stirring calls to action for fuel cells and hydrogen. Is hydrogen different from previous alternative fuel experiences? Might hydrogen succeed on a grand scale, where others have not? What are the business and policy cases for hydrogen? Are they credible?

These questions will be addressed in the context of recent and ongoing hydrogen initiatives, including FreedomCAR, the California Fuel Cell Partnership, the 2004 National Academies hydrogen report, and California's Hydrogen Highways initiative.

Anthony R. Eggert



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Anthony Eggert is the Associate Director of the Hydrogen Pathways research program at the Institute of Transportation Studies at the University of California Davis. Hydrogen Pathways is considered the top interdisciplinary research program in the country focused on the technical, economic, business, and policy implications of a transition to hydrogen in the transportation sector. The program now has 20 active industry and government sponsors and involves over 20 students and faculty in the research. Previous to this program, Anthony spent 6 years working for Ford Motor Company on emissions and fuel economy testing and regulatory affairs and was the manager of Ford's California Fuel Cell Partnership operation in Sacramento, California. Anthony has presented at more than 40 national and international conferences, testified before congress, and has authored numerous articles on hydrogen pathways, fuel cell vehicle and systems modeling.