

Draft, 1/29/03, bdmcnutt and twhite

A Proposal for  
2003 Transportation Policy and Analysis Conference at Asilomar  
Pacific Grove, California  
sponsored by  
Energy and Alternative Fuels Committees, Transportation Research Board

The “Hydrogen Transition” ?

*We are proposing that the singular focus of this year's meeting be the issues surrounding the question of a “Hydrogen Transition” as it relates to the prospective development of Fuel Cell Vehicles. We are in no way proposing to “design” a transition at this Asilomar meeting, but rather address some of the hard questions about what needs to happen for such a change to take place and whether such a transition is likely, needed, or even possible.*

In as much as one can look at hydrogen as just another alternative fuel and fuel cell vehicles as just another step in vehicle technology evolution, the past 20 plus years of policy experience with alternative fuels, conventional fuels, and vehicle technology provide a practical framework for addressing these questions. In particular, there is much to be learned from the alternative fuels failure vis-à-vis the new push towards hydrogen as the future “fuel of choice”, at least as it might be used in FCVs.

Given the state of fuel cell vehicle and hydrogen fuel technology, issues of uncertainty, “locking-in” on costly pathways, sustainability of policies and support, competition from conventional technology, and hydrogen resource possibilities will be key to this discussion. In particular, as we focus on this “hydrogen transition” question, an open mind concerning the transition’s inevitability or desirability will be critical to a successful meeting.

Based on the January 14<sup>th</sup> discussion of the Organizing Committee, the following strawman agenda has been drafted. Specific issues/questions will need to be merged into the proposed sessions and, obviously, speakers/papers will need to be identified for each topic.

Tuesday, July 29, 2003

Evening/ Opening Session:

**1) Goals, Assumptions and Premises**

- What are the goals for pursuing a transportation “hydrogen transition”?
- Are differences of opinion about the goals of a transition critical to other decisions?
- What are the key premises for the next 2 and ½ days of discussion?
- Do “Road Maps” help in understanding goals, assumptions?
- Perhaps, a bit of an “open mike” discussion where folks can express their views.

*[We are suggesting three presentations (goals, key premises for meeting, and a “roadmap”) and a lot of discussion in this session.]*

Wednesday, July 30, 2003

Morning Session:

**2) Lessons Learned**

A retrospective session examining the lessons of the past 20 years of technology development, regulation and other policy approaches to fostering change:

- What has brought about transportation technology change?
- Can government policy intervention be successful (strong enough, durable enough)?
- What does the “Alternative Fuels Failure” tell us about trying to influence changes in the transportation fuels market?
- Teachings from history about large scale technology change outside transportation sector?

*[We are suggesting 4 presentations in this session with more limited discussion.]*

Afternoon Sessions:

**3a) Hydrogen Resource Realities**

- What are the real options and production costs at low and high volume?
- Will carbon sequestration be a requirement and what does this imply about centralized vs. decentralized approaches?
- If its not “clean”, should we bother; does a transition built on fossil fuels make sense?

*[This session can be limited to 3 good presentations and fit into the available time. It will be important to avoid the endless debate that could develop here which will be driven more by views about a sustainable energy future and less by practical hydrogen transition concerns.]*

**3b) Hydrogen Infrastructure Issues**

- Technical Possibilities and Costs
  - Lead time and Scale-up Opportunities and Obstacles (Specific scenarios are not likely to be helpful)
  - Infrastructure Investment; who’s responsible for risks and benefits?
- [This is a good session for a few papers (we are suggesting no more than three) and lots of discussion leading into the evening barbecue. Remember, we are not trying to design a transition]*

Evening Session:

#### **4) Technology Competition**

- Will FCVs provide adequate benefits to cause or, at a minimum, justify a transition?  
What are the likely fuel economy benefits?  
What are emission and performance benefits?
- What is the expected pathway of competing vehicle/fuel technology and what does this mean for hydrogen pathways; what are likely feedbacks and rebound effects?

*[As an evening session, 2 or 3 papers should be the limit; perhaps 2 on the first topic of FCV relative performance and 1 on the competing technology pathway, with rebounds considered.]*

Thursday July 31, 2003

#### Morning Session:

#### **5) Social and Business Perspectives: Is It Worthwhile and to Whom?**

- Understanding Social Costs and Benefits.
- Making the “Business Case”:  
Auto Perspective.  
Energy Perspective.
- What’s in it for Consumers?

*[ This is a good session for some key presentations focusing on why we are bothering at all with FCVs and a hydrogen transition. We have the time for 4 good presentations , followed by debate leading into the lunch hour.]*

#### Afternoon Session:

#### **6) “Out of The Box”**

- Do we have the wrong premises (about FCV success, about hydrogen as the distributed fuel)?
- Is the technology focus wrong, are transportation system or broader lifestyle changes really what is needed?
- Revisiting EVs, given all the resources going into electric drive and batteries, do EVs deserve a second look?
- Will it be impossible to compete with petroleum in the anticipated time frame of the transition?

*[ We anticipate no more than 3 presentations in this session, since they depend on participants wanting to challenge the whole idea underlying FreedomCar and Fuel and this conference. The session is deliberately short to give conference participants a chance for some “free time” in the afternoon.]*

*[The final two sessions are designed to be complementary and move the conference to the key policy issues.]*

Evening Session:

**7) Making Choices**

- Is it “Too Early” given the state of the technology or “Too Late” given political desires to have a significant impact in 2020 to be addressing the hydrogen transition and supporting policy development?
- Is “lock-in” needed or a problem to be avoided? Will we make choices that we will regret later? Can we avoid making those choices for some time and still make progress?
- Who Makes the Choices and How do We Know? What kind of signaling takes place between industries and between industry and government that leads to real change?
- Does a transportation or FCV driven transition make sense for the rest of the economy; has adequate concern and attention been given to feedbacks/interactions in the fuels sector and other parts of the economy?

*[This is a set-up session for the follow-on debate on policies and policy instruments. We would hope it will generate a lot of debate on key aspects of the transition that appear to have gotten little or no attention among the transportation community. 3 or 4 papers are needed, probably including folks outside the transportation analysis area, like industrial organization, etc. We have not been very successful in getting such participants in the past but need to make the effort again, here.]*

Friday, August 1, 2003

Morning Session:

**8) Wrap-up Session: Policy Options and Instruments**

- What is the role of government, to lead or follow?
- When uncertainty dominates, what policies make sense?
- Are there models for successful policy intervention of this magnitude and duration:
  - NASA Space Mission,
  - Interstate Highway System,
  - Bureau of Reclamation western water projects,
  - Rural Electrification,
  - Electric Utility Monopoly franchises and ROR regulation?
- Sustaining Support, Is it possible given the time frame, magnitude of \$\$, and unclear consumer demand?

*[It is unclear to us whether this session ought to have just 1 or 2 papers with lots of debate, or more presentations and less debate. We favor 2 or 3 papers on the first 3 topics above and debate on the 4<sup>th</sup>. Also, we are not trying to come to any consensus as we have in the past, yet it would be useful to have something that looks like conference summary that reflects the variety of issues and views. Suggestions?]*