Infrastructure Issues Affecting Fuel Cell Vehicles

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Possible Consumer Questions

- Where can I re-fuel?
- Where can I park?
- Where can I service my vehicle?
- Can I use it to power my home?
- Where can I demo/purchase one?

Goal

- An institutional, social, and physical environment that will support the commercialization and deployment of fuel cell vehicles as well as other alternate fuel and hybrid vehicles

Objectives

- Elimination of institutional barriers, which include building codes and standards, to application and use of fuel cell vehicles
- Development of a "fuel cell vehicle-friendly" infrastructure
- Coordination of all AFV activities related to institutional issues

Potential Inhibitors to Successful Deployment

- Highway, ferry, tunnel, loading dock, etc. limitations on fuel types and processes
- Construction regulations (i.e. building codes and standards) for above and below grade parking structures

Potential Inhibitors to Successful Deployment

- Zoning, construction, and fire regulations for auto dealerships, repair garages, etc.
- Zoning, construction, and fire regulations for service stations (e.g. gasoline, diesel, CNG, LNG, hydrogen, batteries/recharge, etc.)

Potential Inhibitors to Successful Deployment

- Classification of any fuel processing or reforming activity/facility as hazardous
- Implementation of separate infrastructure efforts for each AFV technology
- Infrastructure and institutional non-uniformity in the U.S. and globally

Some Specific Questions

- What is the current use group of a service station?
- If hydrogen were "manufactured" or stored at a service station, what is the use group?
- Are there differences in building construction, fire, and zoning requirements for different use groups?
- What fuels are acceptable for self-service re-fueling?

Some Specific Questions

- What are the current building construction, fire, electrical and mechanical requirements for parking garages?
- Can hydrogen be stored in existing parking garages?
- What renovations would be required to allow fuel cell vehicles to use existing parking garages?

Possible Actions

- Review current vehicle technology developments and fueling, parking, servicing, etc., scenarios
- Identify criteria in building construction regulations, zoning, etc., that would impact the identified scenarios
- Conduct a "Summit" to focus on the criteria and scenarios and identify problems/issues
- Organize a public/private coalition to identify potential solutions and opportunities

Possible Actions

- Determine needed actions to create those solutions and capture the opportunities
- Organize those actions into an action plan for fuel cell vehicle acceptance
- Create and lead a public/private project to implement the plan
- Integrate these efforts with those of others like EPRI, GRI, NGV Coalition, NMA, etc., leading to development of a broad AFV action plan

Stakeholders and Interested Parties

- Vehicle manufacturers and their suppliers
- Codes and standards organizations (SAE, UL, ICC, etc.)
- Federal, state, and local police, fire and rescue, etc.
- Building, zoning, and fire officials
- Public interest groups (mayors, city managers, counties, etc.)

Stakeholders and Interested Parties

- Architects, engineers, builders, contractors, etc.
- Utilities and energy suppliers
- Consumers
- Insurance
- Testing, certification, and assessment agencies

Stakeholders and Interested Parties

- Unions
- Building owners
- State energy offices
- Fleet owners and national accounts

Specific Work to Date

- Efforts by EPRI, the Infrastructure Working Council, CA state organizations, and others on electric vehicles (e.g. the National Electric Code)
- Efforts by the natural gas industry (i.e. NFPA 52 on CNG and NFPA 57 on LCNG
- USFCC Transportation Working Group

Specific Work to Date

- Efforts by NHA and others on use of hydrogen (i.e. ISO TC 197)
- DOE Policy Office work on energy facility siting
- DOE Clean Cities Program efforts to increase the AFV road population via fleet use