

*2016 Annual Report of The Hydrogen
and Fuel Cell Technical Advisory
Committee: Cover Letter
Observations/Recommendations*

*Friday, May 5, 2017
Washington, D.C.*



Suggestions from HTAC Committee Members

1. Successful commercialization of hydrogen and fuel cells for clean energy applications, will carry substantial benefits to American workers and industries and contribute to the Administration's jobs, infrastructure, and American manufacturing vision.
2. The US is a leader in hydrogen and fuel cell technology, but is facing global competition and needs to keep the momentum going through strong and consistent support.
3. The Committee re-asserts the need for an explicit plan to be provided in 2017 showing the pathway for achieving the 2020 EPACK Title VIII goals for hydrogen and fuel cell development, with benchmarks and milestones required to reach this point.

Suggestions from HTAC Committee Members

While the Committee acknowledges and applauds the important progress made toward these goals since 2005, the evidence shows that the 2015 Title VIII goals have only partially been met, and only in California where State ZEV mandates (with favorable travel provisions) exist. These regulations are well aligned with the Title VIII goals. The successes in California, to date, have certainly enabled a beginning. However, much more is needed to create necessary momentum and to achieve essential scale that can deliver sustainable solutions for the future. The industry is still in its infancy and only hundreds of vehicles are deployed in the marketplace.

Suggestions from HTAC Committee Members

Given these facts, accomplishing Title VIII 2020 goals depends upon a fragile business model. Unless a clear plan is developed and executed from this point through 2020, “widespread” deployment of vehicles and infrastructure could be impeded by changing government policy and an unstable regulatory environment. As such, HTAC recommends that DOE, in the 2016-2017 timeframe, define a clear, explicit plan, including measurable progress milestones, for achieving 2020 Title VIII goals. The plan should be accompanied by sufficient funding and supportive policies, to ensure successful execution. We realize that it is unrealistic to expect FCEVs and hydrogen fueling infrastructure to become simultaneously available across the country, so, a more regional approach will likely be appropriate.

Suggestions from HTAC Committee Members

Be assured that as we share our current observations and recommendations with you, the Committee stands ready to support you and the Department in addressing the challenges during this critical period. We request that you consider the following points, as you balance the many priorities facing you.

- To successfully achieve Title VIII goals, customers must experience positive retail hydrogen fueling experiences, in California and other early markets. This challenge requires DOE support through public-private collaborations like: H2FIRST and H2USA. These initiatives fulfill critical roles in helping to validate station performance, assuring station reliability, verifying hydrogen purity, and establishing accurate metering.

Suggestions from HTAC Committee Members

- Retail vehicle prices are currently subsidized and do not reflect true production cost structures. As long as these production costs are high and the customer value proposition remains challenged, there will be a natural tendency for vehicle makers to moderate commercial field deployments. Rapid learning cycles and manufacturing scale economies are essential prerequisites to overcome unfavorable cost structures. Refueling infrastructure networks are similarly challenged, requiring innovation and high capacity utilization that can only be achieved by growing fuel cell vehicle fleets. Addressing these obstacles will in turn address concerns with both the vehicle and infrastructure business models.

Suggestions from HTAC Committee Members

- Securing industry commitments to high volume manufacturing requires clear and stable policy. The vehicle and refueling infrastructure investments are capital intensive and require a predictable environment, with a pathway to positive long-term economic returns. Commitments in line with those for Battery Electric Vehicles (BEVs) would send a clear signal of that promise.
- Exacerbating these challenges is the fact that the 30% FCEV tax credit is scheduled to expire in 2016. Any interruption of the tax credit will negatively impact FCEV deployments. Extending the credit is an essential enabler for promoting fuel cell commercialization and achieving Title VIII goals.

Suggestions from HTAC Committee Members

- We must again identify budgetary support as an item for your attention. Although budgets have stabilized, and the DOE Program has been extremely effective given budget constraints, it is clear that more funding is required to achieve 2020 Title VIII goals. A well vetted comprehensive plan, as described above, would serve as a foundation to support incremental funding requests that will help achieve those goals.

Suggestions from HTAC Committee Members

- Since 1993, The U.S. Department of Energy's Vehicle Technologies Office, has funded local Clean Cities coalitions, with the goal of eliminate 2.5 billion gallons of petroleum consumption, by 2020. To date, hydrogen FCEV's comprise less than 0.01% of all alternative fuel or advance technology vehicles, according to the 2014 Clean Cities Annual Metrics Report. As FCEVs are commercialized in higher numbers, the Clean Cities emphasis must actively promote and educate consumers on the technology. Furthermore, the Clean Cities program must be updated, to extract available synergies with EPACT Title VIII, while minimizing NOx and VOC vehicle emissions.

Suggestions from HTAC Committee Members

4. The U.S. DOE and Congress should recognize that hydrogen and fuel cell technologies are becoming both commercial in retail settings as well as strategic technologies for military and industrial applications. The U.S. currently has a strong global position in developing and commercializing these technologies. However, several other countries such as Japan, Korea, Germany, and Australia are competitive in this area. It is important for the economic competitiveness and energy security of the U.S. to continue to support and lead these commercialization efforts.

Suggestions from HTAC Committee Members

5. Progress in 2016 for H&FC have been significant – both technology development and early markets.
6. More effort is needed to achieve DOE H&FC technology/cost goals and put us a path that provides maximum benefits for US competitiveness, economy, environment, etc.
7. DOE has played a key role in advancing technology through basic and applied research, analysis, and development activities. Further DOE's development activities which include work on manufacturing, technology validation, C&S, etc. provide benefits to early markets and sharpen the focus and goals of basic and applied research.

Suggestions from HTAC Committee Members

8. The commercialization of hydrogen and fuel cell technologies would benefit from leveraging activities at institutes recently established by Manufacturing USA (<https://www.manufacturingusa.com/>). These institutes support efforts to increase U.S. manufacturing competitiveness and promote a national manufacturing R&D infrastructure. Of particular interest are RAPID, CESMII and America Makes, institutes focused on modular chemical processing (including a focus area on natural gas conversion such as reforming), clean energy smart manufacturing, and additive manufacturing / 3D printing.

Suggestions from HTAC Committee Members

9. I support reinstatement of the FCEV tax credit and it should be bigger than the \$7500 for plug ins because fuel cells and hydrogen technology are at earlier development phase and need much more market development and incentive to catch up. Also FCEV technology needs to get put into 4 wheel drive, heavy duty trucks, and big vehicles which cost more than the small cars so need a bigger boost. I also think taxes on truck sales are very high-- if we look at that tax, maybe it should be reduced for FC heavy duty trucks.

Suggestions from HTAC Committee Members

10. The new Administration is focused on growing jobs in America and infrastructure. We should craft a recommendation that American companies and the US is the brains of FC and hydrogen technology and we need to recapture the leadership and jobs going overseas. To do this we could look at tax advantage for US companies in this space doing work and building stuff in the US. There are DOE support efforts for the industry that should be maintained and increased and we need to build the hydrogen infrastructure for the cars. The federal government infrastructure plan should include xx billion for hydrogen station construction as that enables US made hydrogen, US jobs, and reliability.

Suggestions from HTAC Committee Members

11. Since the administration is looking at budget cuts for FY18, I'd guess Clean Cities won't survive. Not sure we should use one of our few asks for something they want to cut.
12. Think about champions for hydrogen future in this new administration. The OEMs have been in to see Trump and asked for relief on CAFE standards. Who could go in and convince them hydrogen fits with the agenda? I'd use that industry person and or a leadership Senator to quote if you want a quote.

Recommendations in 2016 Draft Report

13. There is a critical need to continue efforts in material and process integration and technology acceleration in order to meet EPACT 2020 goals and to maintain U.S. competitiveness.
14. An explicit plan including measurable milestones should be provided in 2017–2018 for how the 2020 EPACT Title VIII goals will be achieved, with commensurate funding commitments including those identified in the 2015 FAST Act.

2015 Cover Letter

15. DOE support is critical to ensuring positive retail hydrogen fueling experience.
16. Rapid learning cycles and manufacturing scale economies are essential prerequisites to overcome unfavorable cost structures.
17. Securing industry commitments to high volume manufacturing requires clear and stable policy.

2015 Cover Letter

18. Extending the federal FCEV tax credit and the power generation fuel cell Investment Tax Credit (ITC) is an essential enabler for promoting fuel cell commercialization and achieving Title VIII goals.
19. Additional funding is required to achieve 2020 Title VIII goals.
20. Clean Cities program must continue emphasis to actively promote and educate consumers on FCEV technology.

Larson quote – key points

- Hydrogen and fuel cell technologies provide solutions to our most pressing energy challenges.
- They are clean, renewable, and contribute to the strength of our manufacturing sector by employing highly skilled workers.
- The United States has always been at the forefront of this industry.”

– John Larson (D-CT), Co-Chair of the House Hydrogen and Fuel Cell Caucus

Garcia quote – key points

- With the expansion of production facilities, increase in fuel cell manufacturing, and extension of the natural gas infrastructure, there are growing opportunities for the deployment of fuel cells, both on the grid and behind the meter.
- It's critically important that we maintain the momentum of deploying new sources of clean energy.
- Technologies like fuel cells not only serve to improve the reliability of the system but also help create jobs and economic growth in our communities."

– Bryan Garcia, President and CEO of the Connecticut Green Bank

Thank You!

Morry Markowitz
202-261-1331
mmarkowitz@fchea.org

Sandra Curtin
202-261-1338
scurtin@fchea.org

www.fchea.org