



ENVIRONMENTAL AND ENERGY STUDY INSTITUTE



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Re: Draft Plug-In Hybrid Electric Vehicle R&D Plan

We write today to provide comment on the Department of Energy's (DOE) Office of FreedomCAR and Vehicle Technologies Draft Plug-In Hybrid Electric Vehicle R&D Plan in response DOE's request on February 28, 2007.

The Environmental and Energy Study Institute (EESI) is a non-profit organization providing timely information on energy and environmental policy issues to policymakers and stakeholders and developing innovative policy solutions that set us on a cleaner, more secure and sustainable energy path. The National Plug-In Partners Campaign is being led by the city of Austin and Austin Energy to build support for the mass manufacture of plug-in hybrid electric vehicles (PHEVs). EESI is a founding member and a key partner in this campaign. We believe that PHEV technology offers a **near-term** opportunity to reduce oil consumption, decrease harmful pollutants and greenhouse gas emissions, and boost local economies by providing and maintaining much needed jobs to the domestic automobile and allied manufacturing sectors. PHEV technology exists today and with support from the Department of Energy and other federal and state agencies, there is tremendous opportunity to deploy PHEVs on a mass scale in the transportation sector in the near-term.

We are pleased that DOE has prepared this comprehensive research and development plan and appreciate the opportunity to offer comment on the plan. EESI and the National Plug-In Partners Campaign would like to highlight certain issues related to the plan which we believe warrant closer attention from DOE.

Timeline Projections

- First, we firmly believe that DOE's timeline for the various phases of design and battery development are too conservative. For the United States to achieve its goal of significant oil displacement and combat climate change, the government must adopt an ambitious scope of research and development to be implemented now. The current plan is far less aggressive and will do little to address reduced oil consumption through the deployment of fuel-efficient advanced technologies such as PHEVs.
- The DOE plan must reflect an urgency to develop and deploy technologies needed to bring PHEVs to the market in the near-term (3-5 years).
- General Motors Corporation (GM) has announced a tentative target of 2010 for the mass production of the Chevrolet Volt concept plug-in hybrid vehicle capable of a 40-mile all-electric operation. GM has

already awarded contracts to battery companies to develop and test batteries for its first planned plug-in vehicle – the Saturn Vue.

- Other automakers including Toyota, Daimler Chrysler and Ford Motor Company have signaled interest in this technology. DaimlerChrysler already has a prototype vehicle in testing. DOE should capitalize on this industry interest and set ambitious targets and goals in its R&D plan. DOE must issue the challenge to industry and work with them to bring these vehicles to market as soon as possible.
- The current plan does not reflect this urgency. DOE projects that it will only issue solicitations for developing battery design beginning in FY 2008. Phase two of this design process does not even begin until FY 2012 – two years after the projected introduction of an OEM plug-in hybrid with DOE’s targeted charge depleting electric range of 40 miles.
- Tesla Motors has already produced a lithium-ion battery-powered all-electric car available in the market with plans to develop other models within the next two years. We would like to emphasize that these are OEM vehicles utilizing existing lithium-ion battery technology. DOE should utilize this opportunity to learn from these efforts to accelerate achievement of R&D goals outlined in the plan.
- While we acknowledge that some uncertainty remains regarding battery technology and reliability, it is important for the government to take a leadership role and push for aggressive research, development and deployment so that these technologies are successfully brought to the market at an accelerated rate.
- The plan calls for a modest OEM validation and demonstration project comprised of 10-20 vehicles in 3-5 cities with a 2008-2010 timeframe. We contend that such a small demonstration project over such an extended period does little to accelerate the deployment of PHEVS on a large scale.

Smart Grid Capability

- We are concerned that the DOE plan does not address smart grid technologies as part of its R&D scope. A new Pacific Northwest National Lab study suggests that grid-smart “smart charging” systems in PHEVS could optimally and instantaneously match PHEV charging to the real-time condition of the electric grid and possibly allow vehicle to grid (V2G) capabilities. PNNL is already developing a smart chip and there are plans to integrate this chip into existing PHEV conversions. It is our understanding that Tesla Motors is incorporating technology into their vehicles so that they are “smart grid capable.” Similar technology is being used in California with appliances. Yet this possibility is discounted in the DOE research plan.
- While smart grid technologies are still under development and testing, we feel the plan misses the opportunity to emphasize the importance of such technologies in providing additional PHEV benefits.
- At a minimum, we recommend that DOE require all test and demonstration vehicles to at least be “smart grid-capable.” This will allow for the simultaneous development of smart grid technologies and their eventual integration into these PHEVS.

We look forward to working with DOE to advance our shared goal of deploying cleaner, more efficient technology options in the transportation sector. We thank you for the opportunity to comment on this draft plan. If you have further questions, please contact Shefali Ranganathan at 202-662-1883 or via email sranganathan@eesi.org or Daryl Slusher at 512-322-6210 or via email Daryl.Slusher@austinenergy.com.

Sincerely,



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