Comments on the DOE's draft Quadrennial Technology Review:

We are concerned that the QTR as written does not even mention one of the most promising vehicle technologies: hydrogen-powered fuel cell electric vehicles (FCEVs.) Other nations including Germany, Japan, South Korea and Scandinavia are planning major FCEV projects to reduce their greenhouse gas emissions and substantially cut petroleum consumption. Germany has concluded that they cannot achieve significant greenhouse gas reductions by relying only on battery electric vehicles (BEVs) and plug-in hybrid electric vehicles (PHEVs) as proposed by the DOE [See conclusions below from the McKinsey & Company analysis of alternative vehicles in the EU.] Here are three specific recommendations for your QTR:

1. I applaud the language in the Federal Register "request for information" where Steve Koonin states that the role of DOE is to "enable options for the private sector", further explaining that by "enable options" he means that: "we do not pick winners and losers: the market makes these choices ." I agree that this should be the mission of DOE and that markets will ultimately decide which options prevail in the real world. However, by attempting to eliminate funding for FCEVs while lavishing billions of dollars on BEVs and PHEVs, the DOE is clearly picking winners and losers, and leaving out hydrogen and FCEVs in the QTR is definitely placing FCEVs in the "loser" column. The DOE should make their deeds match their words by including a section on hydrogen-powered FCEVs, citing the progress made by the DOE in their technical validation project where the NREL has collected detailed, on the road performance data[1] on 155 FCEVs made by 5 or 6 automobile companies, driven by ordinary drivers, accumulating 131,000 hours of operation and over 3 million miles to date, with drivers refueling their vehicles with high pressure hydrogen 25,800 times without a major incident. This is far more information and on the road experience than we have with BEVs and PHEVs made by OEMs that are just entering the market this year and are heavily supported by the DOE and included in the QTR draft.

2. The Federal Register RFI also requested suggestions for Technologies and Resources in Section H. I would highly recommend that they include the McKinsey report referenced below, which is particularly authoritative, since it is based on proprietary cost data from 10 major automobile companies.

3. Finally, the RFI states that DOE will review the draft QTR document and any suggested changes and additions with "advisory committees, workshops, & expert discussion groups." I recommend that that the DOE includes the Hydrogen and fuel cell technology committee (HTAC) as a reviewer of this important document. HTAC was established by Congress to provide expert advice to the Secretary regarding hydrogen and fuel cell technology.

[1] Keith Wipke, Sam Sprik, Jennifer Kurtz and Todd Ramsden, "Spring 2011 Composite Data Products: National FCEV Learning Demonstration," The National Renewable Energy Laboratory, presented at the Fuel Cell and Hydrogen Energy Conference, March 29, 2011, Washington D.C.

Major EU Analysis of alternative vehicles by the McKinsey & Company

The highly respected consulting firm, McKinsey & Company, has just (2010) completed a major analysis of alternative vehicles in the EU[2]. They concluded that:

1. Hydrogen-powered FCEVs will cost less to own and operate than either battery electric vehicles (BEVs) or plug-in hybrid electric vehicles (PHEVs) by 2030, including the cost of the hydrogen infrastructure.

2. Incredibly, they estimate that the cost of installing sufficient charging stations for BEVs and PHEVs will cost five times as much as the cost of installing a hydrogen infrastructure for the entire EU.

3. Another astounding conclusion: McKinsey concluded that BEVs are well-suited for small cars that travel short distances (not surprising), but they also determined that 50% of all cars in the EU that generate 75% of all greenhouse gas (GHG) emissions are either too big and/ or travel too far to be comfortably and affordably powered by batteries[3]. But FCEVs have already demonstrated sufficient range for larger (SUV-like) vehicles, so they conclude that hydrogen-powered FCEVs must be part of the mix of alternative vehicles in the EU in order for them to meet their goal of cutting GHGs by 50% below 1990 levels by 2050.

Sincerely,

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[2] The full Mckinsey report "A Portfolio of power-trains for Europe: a fact-based analysis- the Role of battery electric vehicles, plug-in hybrid electric vehicles and fuel cell electric vehicles" can be downloaded from http://www.now-gmbh.de/die-now/publikationen/studie-entkarbonisierung-individualverkehrs.html

[3] If 50% of all cars in the EU are too big or travel too far, just think what that percentage would be in the US with our consistently larger cars and longer driving ranges.