Comments on DOE's Draft
Quadrennial Technology Review Framing Document

I am astonished and appalled that the QTR Framing Document contains not a single reference to either stationary or transportation applications of Hydrogen and Fuel Cell Technology (HFCT). This omission amounts to *de facto* picking "winners and losers" (in the case of HFCT, no mention means being tagged a "loser"), which DOE has consistently said it will not do. Further, this omission runs counter to conclusions from:

- The PCAST Report (which prompted the QTR) statement that includes hydrogen as "among the promising pathways".
- The National Academy study ("Transition to Alternative Transportation Technologies") commissioned by DOE, which concluded that without hydrogen fuel cell vehicles in the mix with biofuels, PHEV's and advanced combustion vehicles, the US could not reduce CO2 emissions from the light vehicle fleet sufficiently to meet the administration's objectives; nor could we reduce oil use sufficiently to assure our nation's energy security.
- The very recent McKinsey study, sponsored by the EU and drawing on proprietary data from 10 major automobile companies worldwide. This study pointed out that HFCV's were essential to meeting the EU's carbon reduction goals and that the cost of installing a hydrogen fueling infrastructure was significantly <u>less</u> than the cost of a comparable infrastructure for PHEV's and EV's.

How the QTR can be so blind to these conclusions from diverse authoritative and credible sources is hard to fathom.

As Chair of DOE's congressionally mandated (EPACT 2005) Hydrogen and Fuel Cell Technical Advisory Committee (HTAC), I would urge that Under Secretary Koonin join the HTAC meeting scheduled for June 14-15, 2011, to listen, with an open mind, to the views of the HTAC members who represent a broad cross section of industrial, government, and non-profit organizations from across the nation and are proud to serve the DOE. Their views are well summarized in a letter sent to Secretary Chu last month along with the 2010 HTAC Annual Report; that letter is attached. [Please refer to the HTAC website: www.hydrogen.energy.gov/advisory_htac.html to review the 2010 Annual Report.]

In many ways the QTR Framing Document is clear and very thoughtful. Having been an active professional in the energy field for my entire career, I would frankly have been hard pressed to do better. But the Framing Document has <u>one gaping hole</u> -- it totally ignores Hydrogen and Fuel Cell Technologies in Section H and throughout, thereby ignoring both the PCAST's recommendation to include hydrogen in the mix of energy options, and the findings of the reports mentioned above, as well as many others prepared by DOE itself.

Dr. Robert W. Shaw, Jr.
President, Aretê Corporation
Chair, HTAC

Attachment: HTAC's letter to Secretary Chu, transmitting the Committee's 2010 Annual Report