I wish to make the following comments concerning the DOE Quadrennial Report:

1. The report treats all generation options as equivalent. 85% of electric power is baseload that is provided by coal, natural gas or nuclear. Solar and wind are intermittent sources of energy and as such will be unlikely cost effective options for baseload power. There are major issues of storage and transmission for these technologies. Frankly the report needs to better state that unless nuclear, and/or carbon capture and sequestration technologies can be achieved with acceptable incremental costs then the President's goal of reducing energy-related greenhouse gas emissions by 85% by 2050 is not achievable.

2. There is an overly optimistic projection for electric vehicles and no mention of hydrogen fuel cell vehicles. The President's target to support the deployment of 1 million electric vehicles (EVs) on the road by 2015 is obviously unobtainable unless the definition is extended to include hybrid vehicles. The DOE Fuel Cell and Hydrogen Technology Program, Multi-Year Program Plan, 2011-2015, 2010 needs to be included in the references.

3. There are no references to automotive or other national programs for the deployment of pre-commercial hydrogen fuel vehicles by 2015. The automotive manufacturers are proceeding with plans to deploy tens of thousands of hydrogen fuel cell vehicles by 2015-2017 at their own expense. Within your report in the 5.2.4 Technology Demonstration section it is stated that: "The DOE collaborates with industry on demonstration projects to help catalyse large-scale adoption of promising energy technologies." Yet DOE does not have a vehicle market transformation program to support the deployment of the hydrogen fueling stations for these vehicles which have been shown to be less costly for the government than installing a supporting electric station system for EVs.

4. If one compares the DOE/industry targets presented in DOE program plans for battery costs by 2015, and fuel cell and hydrogen storage costs by 2010, and employs them in comparative vehicle analyses, then both technologies have additional vehicle costs and lower fuel costs that DO NOT establish an economic advantage for either vehicle. So the effusive description of one technology (EVs) and no mention of the alternative or documentation for it, is completely unwarranted.

5. It needs to be better understood as to where carbon capture and sequestration technology can lead this nation. As I stated in point 1, we will need this technology or have a total reliance on nuclear power for baseload power. The nation is awash in new natural gas formations that use fracturing technology. When one captures and sequesters carbon dioxide from coal or natural gas or biomass, hydrogen is the gas that is left. Now the U.S. can EXPORT liquid natural gas to other nations for their transportation fuel supply to be converted to hydrogen. The U.S. can have a $350 billion export market in place of a $350 billion import market.

I have written and published a paper comparing PHEVs, EVs and hydrogen fuel cell vehicles that was presented at the National Hydrogen Association in 2010 and plan on attending the Annual Technology Review in Washington, DC this May 9 to 11. I would be happy to discuss my comments with any of the staff concerning the Quadrennial report if a meeting can be arranged.

Sincerely,
Sig Gronich