One of the most important goals of CARB is the reversal of climate change and the reduction of atmospheric emissions. Even though the electric energy produced from the combustion of coal has been reduced, the majority of green house gas emissions still result from the combustion of fossil fuels.

The biggest contributors to climate change and green house gas emissions in California today are the modes of transportation, which have surpassed the electric power plants in emissions. Hence, CARB has placed a lot of focus on zero emission vehicles. The problem as I see it is that CARB's focus seems to be almost exclusively on electric powered vehicles. Cleaner and more efficient hydrogen fueled vehicles are not mentioned in the Strategic Research Plan. Historically, it has been expensive to produce hydrogen in sufficient quantities to compete with

electricity as a transportation fuel. Further, most hydrogen was produced by a process that itself produced green house gases. Clean hydrogen for use as a transportation fuel can be produced by electrolysis fueled by geothermal energy.

Increasing demands for energy in a variety of needs and uses have caused experts to pursue technical improvements that increase the availability of energy at lower costs. One of the technical improvements that should be adopted in new geothermal facilities is the Brayton cycle, which has been improved in a number of ways over the more commonly used Rankine cycle. One of the most important improvements is that the operating efficiency of the Brayton cycle is approximately fifty percent higher than the efficiency of the Rankine cycle.

In addition, geothermal facilities often operate in baseload mode, over ninety percent of the time. To the extent that the facility is prepared to operate as an electrolyzer, it can be used in electrolysis

to create hydrogen for the transportation sector or other customer that is prepared to use the hydrogen or store it as fuel, thereby disrupting and ultimately replacing oil, natural gas and other polluting fuels. When electricity is needed for balancing the grid, the amount used for electrolysis can be reduced accordingly in two seconds, and the electricity sent to the grid.

If CARB is not already investigating and pursuing a cogenerating system such as the one described above, we would appreciate an opportunity to discuss it with you further.