Work sample: Meredith Hunt
Client: Bush Administration Energy Task Force (2004)
Opinion-Editorial Piece

Hydrogen fuel cell research may be the next big thing in alternative energy

The California energy crisis of 2002 and the blackouts that stretched from Detroit to New York last August revealed significant flaws in our electric transmission system and signaled an urgent need to improve how we supply electricity. The business losses, security threats and interruption to daily lives produced by power failures are serious challenges, but the impact they have on the global and digital economy is enormous. Our economic health depends heavily on the competence of our electric system and the availability of clean, abundant and affordable energy supplies.

Our current electrical grid system is aging, and as a result, suffers from poor efficiency and inadequate capacity. Additionally, as industry, commerce and housing develop in new areas of the country, the distribution of electrical demand is shifting and creating a more complex and sizable system that is harder to regulate.

The current debate over whether last summer's blackouts could have been prevented is irrelevant. The question instead should be: what can we do now to avoid future electricity crises?

In addition to passing legislation in Congress that includes mandatory reliability standards and substantial penalties for non-compliance, a number of technical and organizational improvements are needed to assure the seamless coordination of operations across the North American power grid.

A recent report from the U.S.-Canada Power System Outage Task Force, co-chaired by Department of Energy Secretary Spencer Abraham, outlines plans to mend our electric transmission system to avoid future power outages. Many new technologies exist or are being developed to address the problems with the current grid system, and a stronger emphasis on science and technological innovation is fundamental to solving the problems of energy inefficiency.

As one solution to the deficiencies of our current energy system, the Bush Administration has proposed $350 million in new funding for hydrogen fuel cell research. Investment in hydrogen fuel cells enables clean, environmentally safe, large-scale energy production and can be applied to transportation needs as well as to electricity generation for commercial and residential uses.

Hydrogen fuel cells are our best hope for reducing our dependence on foreign energy imports. Currently 55 percent of the oil our nation consumes comes from foreign imports, a percentage that is expected to grow to 70 percent by 2025. Because two-thirds of American oil use is for transportation, fuel cell vehicles have the potential to dramatically decrease our dependence on foreign oil.

The need to resolve our energy problems with new technological applications does not end with hydrogen cells. We must also modify some of our older methods for generating electricity instead of abandoning them altogether. The U.S. uses 40 percent of its energy to generate electricity, a process that is only 30 percent efficient. While new technologies are vital, we cannot abandon coal, which accounts for 55 percent of our electricity generation. They key is to develop and implement coal technology in a cleaner, more efficient way.

Computerized controls, improved burner designs, better gas cleaning systems, higher performance turbines and complementary fuel cells can all be used to enhance the production of electricity from coal. Improving the efficiency of coal-fired power plants from 30 to 40 percent would translate into huge energy savings, the equivalent of 5.5 quads of energy per year or roughly 25 percent of total U.S. coal consumption.

While more research is needed, we are headed in the right direction by applying technological and scientific solutions to our current energy constraints. The energy legislation that has been initiated in Congress contains important provisions about efficiency, and we need to get behind the bill to ensure the implementation of these technologies.

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Through the President's Hydrogen Fuel Initiative, we have the support and backing to move away from our dependence on energy derived from fossil fuels and foreign sources. We need to continue a bold and sustained investment in these technologies to solve the electric grid problem. Innovation leads to new industries, opportunities and multi-generation job creation. America has always set itself apart by constantly innovating in business, and we should continue this vigilance when it comes to the way we generate and supply energy.