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A CONVERSATION WITH NEIL McCANNEY

Visionary inventor and founder of Advanced Hydrogen Power Systems, Inc.

- Q: Energy talk is everywhere, but, so far, no major breakthroughs. What's going on?
- A: I'm glad people are looking into alternative energy, but I'm frustrated that so many of the ideas seem to be based in fantasy. They're not practical. Hydrogen-fueled cars sound great until you start looking into the problem of getting hydrogen fuel *to* the cars. It will take a massive infrastructure that does not exist today, and there are neither plans nor billions of dollars to put one into place. We need to find an approach that makes practical sense.
- Q: Isn't it important to get off of oil, though?
- A: Yes, but let's be real about that. We are an oil-dependent society to a huge degree. There are more than 150 million cars in the US alone! It's an unavoidable fact, just as it's unavoidable that oil is a finite resource for which more and more people are clamoring. We need to find a much better way to use the oil we have today while alternative fuel technologies are developed. This invention raises the average fuel efficiency of a car from roughly 30 mpg to 400 mpg. When you can make 1 gallon of gas do the work of 13 gallons, that makes an enormous difference in how long our oil lasts. It also reduces pollution in a drastic way that doesn't require new infrastructures or lifestyle changes.
- Q: So, what sets your idea apart from the hundreds of other theories out there about hydrogen fuel and fuel cells?
- A: The main difference is that it doesn't rely on impractical assumptions. I approached the problem as an engineer, made a list of everything you couldn't do and everything you must do, and then found a solution between those two limits. The result is real engineering that solves the hydrogen storage problem by *eliminating it*. If you can't store hydrogen—and, so far, no one has figured out a way to do that—you have to make it as you use it. Every piece of technology in this invention exists right now, today. The specialized ceramic membranes that are used to split the water and create hydrogen are a proven technology developed at Argonne National Laboratory, and we've already set up a licensing agreement to use them. Everything else is available equipment that just needed to be put together in the right way. We've done it on paper and through computer modeling. Now we're making it real.
- Q: Cars are talked about as the big market for hydrogen energy. Can you see other uses for the Hydrogen Mobile Power Plant?

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- A: Absolutely! Adding this invention to cars and trucks, even boats and larger ships, would be a great benefit, but it could just as easily be used to power a home. The cost of home heating oil more than doubled between 2003 and 2007, and that was before the unprecedented rise in fuel prices that we are experiencing in 2008. There are people who simply can't afford to heat their homes this winter or will have to choose between oil and other needs such as food or medicine. This invention could solve that problem and provide a stable, cheap source of energy for the average homeowner while easing the pressure on our overburdened energy grid.
- Q: Sounds like a big impact.
- A: I think it's even bigger than that, actually. We're currently focused on the issues that the US is facing, but consider the developing world and their growing need for energy. This power system could direct them down an entirely different energy path than the unsustainable one we've already taken and they are starting to take now. We can market a more positive alternative that provides energy, reduces pollution and stretches the petroleum resources for everyone.
- Q: Where are you with the project now?
- A: Our group is made up of a committed group that has gone all-out to fund the patent process and the first stages of prototyping, but we can only do so much. The technologies exist, but we need more than we can finance alone. The idea is sound. The time to create it is right now. We just need the financing to put all the pieces together, optimize the design for affordable large-scale production, and bring it to the public. With funding, our plan accomplishes all of this in less than five years.
- Q: One gallon of gas doing the work of 13 in less than five years. You think something this revolutionary can happen that quickly?
- A: Just a few years ago, a coming-together of scientists, inventors and funding put a man on the Moon. We need that kind of commitment—an Energy Race—to produce immediate, practical solutions to the energy crisis. Let's stop dragging our feet and talking about "20 or 30 years from now . . ." Let's get to solving the problems we face in a practical way. The Hydrogen Mobile Power Plant could put new technology into people's hands now if a concerted effort can be made.
- Q: Why you? You're an electrical engineer, not an alternative energy specialist. What makes you qualified to tackle this kind of problem?
- A: Why not me? I have ten patents already, all in different fields. Thomas Edison held more than a thousand patents for a huge range of inventions. I think all inventors share two things—the ability to understand a problem, and an unbridled desire to solve it. To be honest, this started with a bet at a family dinner about whether I could do it. Once I challenged my mind with the problem, I knew I could solve it.

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