

# **DOE 2016 DOCUMENTS:**

## **CORE DOCUMENT- HIGHLIGHTS**

Draft 1.3 – (Subject to daily updates and public comment editorial)

### **Product Highlights:**

The product we will be deploying for this funding award was always designed for vehicles, as have been all of our products since the inception of our business.

The product can be permanently built into a vehicle at initial manufacturing or added into a vehicle in after-market.

The product can also be used outside of vehicles. (ie: emergency energy deployments)

The product is modular in systematization.

The product IP is protect by issued U.S. Government-reviewed patent awards, trade secrets and executed NDA's.

The product can be the primary or secondary source of power or a range-extender.

The product works on EVERY vehicle, on Earth, Today! To confirm: It helps every single electric vehicle, gasoline vehicle, diesel vehicle and fuel cell vehicle, on the planet, today and for the next 20 years. It is NOT specific to a single fuel-type vehicle.

All of the fuel stock for the product can come from domestic sources.

The product can be easily scaled to any size energy need.

Every bit of infrastructure for the product is already built. A major gas station service has already expressed partnership interest.

90% of all existing energy suppliers can provide services or resources for the product.

The product can be built in existing domestic structures using domestic workers.

The product can meet 80% of the related requests at DoD and on Grants.gov and can be built to MilSpec.

The product solves the internationally highlighted problem caused by pollution and wasted expenses from idling commercial trucks.

The product will be demonstrated and public metricized in state-of-the-art test vehicles which deliver record-setting performance.

The product solves the electric extension cord problem for electric car owners and landlords by eliminating the need to install, or search for, extension cords or their outlets.

The product re-introduces profits lost from new technologies back into the profit stream of many companies who are concerned that they may lose profits from new technologies.

Every sub-part of the product is already being manufactured today. There is little, or no, technology development risk.

## **Business Outline**

### **Our business is: The provision of exceptional mobile energy transportation, production and distribution.**

We have won Congressional commendation, seminal patent awards, government grants and public acclaim as well as the wrath of the shareholders of competing technologies threatened by becoming obsolescent from modern approaches. Competitors, and their political employees, have spent vast resources to try to halt the progress of our technologies but the public and the market have sent them packing and industry has found that there is no other workable solution to solve the needs of the contemporary world.

Status:

1. We have translated our idea into a compelling business model validated by market investments, and competitor copy-cat and interdiction attempts.
2. We have crafted a business plan to serve as our “Plan A” Roadmap and created multiple Plan B contingency options.
3. We have found and investigated our competitors.
4. We have draft an updated list of our Dream Team and kept it confidential to mitigate previous poaching and industrial intelligence gathering attempts.
5. We have allocated the equity opportunities in our venture.
6. We have built minimum viable product models and validated our plan with customers.
7. We have established our brand with online public profiles and web presence.
8. We have networked effectively within the entrepreneurial ecosystem and government political

circles.

9. We have incorporated for protection and investment.
10. We have “Lawyered Up” with primary, secondary and tertiary on-call expert law and forensics resources.
11. We have sourced a list of additional potential directors and advisors.
12. We have sourced special investigators and security personnel skilled in interdicting “moles”, competitor and overseas hackers and creating a buttress against additional intellectual property theft attempts.
13. We have selected a primary, secondary and tertiary on-call accounting service and an accounting system and created a novel “floating over-head” system which can slide our Cost-of-Operations from low to high, on-demand, in order to weather economic turmoils and competitive attacks.
14. We have established a credit profile and sourced credit management services.
15. We have received Congressional validation that all of our projections were accurate in our previous related proposals while almost every competitor projection was wrong, thus proving that our projection accuracy is effective.
16. We have opened Bank, Credit Card and Merchant Accounts and created a system to open and close them on an “as-needed” basis to dial our overhead.
17. We have chosen our key technologies, platforms and vendor options and will finalize them pending the global market focus group update interviews with our customers and partners, which will be financed by this effort.
18. We have sourced services to measure our business with quantitative and qualitative data analytics.
19. We have proven that we can, and will, litigate, interdict and terminate any competitor, of any size, who attempts to attack our organization.
20. We have ready resources to round out our team with employees and contractors.
21. We have established a stock option plan to motivate our teams.
22. We have created upside that is attractive to investors.
23. We have sourced resources to nurture our investor pipeline.
24. We have created online fund-raising support platforms.
25. We have prepared legal services who can support term sheet negotiation and investor due diligence.

26. We have sourced multiple experts who can support valuation calculations for funding and option grants.
27. We have targeted an acquisition path as our exit strategy for investors.
28. We have historically proven our ability to innovate ahead of our competition.
29. We have acknowledged that the energy industry is a trillion dollar-plus opportunity which also carries with it the risk of high-ticket interdictions by competitive forces. We have mitigated future interdiction attempts by partnering with law enforcement, journalist and special investigator resources who have proven their value in recent activities.
30. We have established a business policy of transparency and support for the public markets which has been embraced by billions of members of the global community.
31. We have interested co-funding parties who will move forward based upon an acceptable letter of Commitment from the Department of Energy.
32. We have pre-fit our product to every major automotive manufacturer including Honda, Toyota, Kia, Hyundai and all other key industrial, defense and consumer vehicle partners.

## **Market Highlights**

After hundreds of billions of dollars, and decades, of research the market, and industry, have spoken:  
*“There is no other technology that solves all of the problems of modern mobile energy”*

### **Honda also announces hydrogen commitment to H2 as eventual sole fuel source:**



Honda - Honda just unveiled its new hydrogen-powered car. Emits nothing but water vapour.

Just when everyone's getting all excited about electric cars usurping their fossil fuel-guzzling counterparts, Honda has announced that its hydrogen-powered cars will go on sale in Japan as early as March 2016, with launches in Europe and the US to follow.

The five-seated sedan, called the FCV Clarity, can travel 700 km (434 miles) on a single charge. It's been priced at 7.66 million yen, or US\$82,807, which puts it just in the affordability range for the average consumer, the Japanese automaker saying it expects to sell far more than the 72 units it sold of its previous-generation model, the FCX Clarity. "We want this car to be the trigger for the 'hydrogen society,'" Honda operating officer, Toshihiro Mibe, told Reuters at the Tokyo Motor Show in Japan this week.

A Honda hydrogen-powered car is nothing new. Back in 2008, the FCX Clarity was leased to a handful of private buyers in California as part of a subsidized trial deal, but things didn't go so well that time around.

For one thing, the car cost 10 times more than it does now, and on top of that, it was 30 percent less powerful. The hydrogen fuel cell stack was also incredibly bulky, and the last thing you want to do is

# LA TIMES

## Carmakers prepare to shift to hydrogen fuel cells



Hydrogen fueling station operator Dan Poppe's first car version of the Toyota Mirai, above, this year. To the right: A car refuels at a hydrogen fueling station in Burlingame, Calif.

By CHARLES PLATNER  
*Contributor reporter*

### SHARELINES

- Toyota actually leases fuel cells to other zero-emission vehicles, a Toyota manager says.
- Toyota will launch a fuel cell version in Japan early next year and in the U.S. by the summer.
- Honda is preparing to launch a new fuel cell car next year.

Oct. 10, 2014, 10:14 a.m. PDT

**C**oncerned about slow sales of electric cars and plug-in hybrids, automakers are increasingly betting the future of green cars on hydrogen fuel cell technology.

Even Toyota Motor Corp., maker of the popular Prius gas-electric hybrid, will use hydrogen instead of batteries to power its next generation of green vehicles.

"Today, Toyota actually leases fuel cells to other zero-emission vehicles, like pure battery electric vehicles," said Craig Scott, the company's national manager of advanced technologies. "We'd like to be still selling cars when there's no more gas. And as one is coming to our door asking us to build a new electric car."

But even hydrogen's most ardent proponents agree the technology faces enormous hurdles. Like electric cars, hydrogen fuel cell vehicles are expensive. So is the infrastructure to refuel them.



Poppe's first car version of the Toyota Mirai, above, this year. To the right: A car refuels at a hydrogen fueling station in Burlingame, Calif.

Car companies have been slow to put hydrogen fuel cell vehicles on the market in part because of the lack of fueling stations. Operators of fueling stations, in turn, won't build more retail outlets unless they see more fuel cell car sales.

Dan Poppe is among the few early investors in hydrogen stations. Wearing a hard hat and coveralls at his Burlingame station, Poppe chuckles at the edge of his mustache and worries about his future.

"In 2004, we were told we'd have 100,000 cars on the road [in California] by 2010 — but it was more like 200 cars," says Poppe, whose company, H2 FuelNet, builds and operates stations in California. "Today, we still only have about 200. That's not going to do it."

Hydrogen fuel cell car makers and station operators like Poppe are subsidized by the state of California, which has set a goal of having 1.5 million zero-emission cars on the road by 2025. By the same year, the state wants 15% of all new cars sold to be zero-emission vehicles.

The category includes plug-in hybrids — which can travel a few miles on battery power alone before a gas engine kicks in — but it doesn't include traditional hybrids, which sell at lower cost and in much higher volumes.

Automakers are still working on electric car technology, and sales of battery electric and plug-in hybrid vehicles are up 30% this year over 2013. Still, total sales for zero-emission vehicles represent less than 1% of all cars nationally.

They are more popular in California than anywhere else. The state's drivers own 40% of the nation's zero-emission vehicles, almost all of them plug-in hybrids and battery electric vehicles. But automakers still struggling to produce a mass-market electric car, fuel cells increasingly look like the ascendancy platform.

**"We would like to be still selling cars when there's no more gas. And no one is coming to our door asking us to build a new electric car."**

—Craig Scott, Toyota's national manager of advanced technologies

Oct. 10, 2014, 10:14 a.m. PDT

The state will also award automakers environmental credits for building them, which they can use to comply with California clean air mandates or sell to other automakers who need credits to comply. Automakers get more credits for fuel-cell cars than most battery electric or plug-in hybrids.

Hydrogen refueling station operators like Poppe also get money from the state and other agencies, among them the California Energy Commission, California Air Resources Board and South Coast Air Quality Management District.

Poppe received \$1 million from the state to build a station in China. He got \$300,000 from the energy commission and the air quality district to operate his station in Burlingame.

The district says it has spent \$10.4 million so far for the construction, operation and maintenance of nine Southern California stations, with "considerably more funds" having been spent by the energy commission and the air resources board, agency spokesman Sam Albrecht said.

To qualify for a \$4 million grant, Poppe had to invest \$2 million of his own money. To receive grants to cover operational expenses, he has had to hit specific performance goals — a certain number of pumps open, operating at certain capacities, by certain dates — or face being disqualified.



Poppe demonstrates filling up a hydrogen fuel cell station in Burlingame, Calif.

Despite the risks to entrepreneurs, Poppe believes the future is hydrogen, because fuel cell vehicles address the two main shortcomings of today's battery-powered cars: short driving range and long recharging times.

Car companies agree.

Toyota will launch a fuel cell sedan in Japan early next year and in the U.S. by the summer. Hyundai Motor Co. started leasing a hydrogen fuel cell version of its Tucson sport utility vehicle this year. Honda Motor Co., which has spent years testing and leasing its FCX Clarity fuel cell vehicle, is preparing to launch a new fuel cell car sometime next year.

Ford Motor Co., which has put 1.2 million test miles on a fleet of 300 fuel cell vehicles over the last several years, recently cut a deal with Daimler, Renault and Nissan to develop a joint fuel cell technology that all four companies would share.

General Motors Co., which holds more patents for hydrogen fuel cell technology than any other automaker, has similarly tested its HydroGen3 car. GM has partnered with Honda, its rival for the number of new fuel cell patents each year, to co-develop new automotive fuel cell applications.

The cars, when they arrive, won't come cheap. Toyota hasn't set a price for its car here, but when it launches in Japan it will have a \$60,000 sticker price — though buyers will qualify for a \$10,000 government rebate.

Fuel cell cars have about the same range as many gas-powered vehicles — as much as 300 miles between charging stops.

Most electric cars have a range of about 80 miles, though more expensive battery-powered cars — such as the Tesla Model S — offer more than 300 miles of driving range. The Tesla Model S starts at \$75,000 and can cost upward of \$100,000 with the largest battery and longest options.

In addition, fuel cell advocates point out that there are multiple sources of hydrogen, including hydro-electric or wind generators, nuclear power plants and natural gas.

Elon Musk, chairman of the battery-electric vehicle manufacturer Tesla Motors Inc., dislikes hydrogen-powered cars and calls the science behind them overcomplicated. "I usually call them 'fool cells,'" Musk told shareholders in June, having earlier dismissed the technology as "a load of rubbish."

Musk did not elaborate on specific weaknesses of hydrogen power or why he believes batteries will remain the dominant power source for personal cars. A Tesla spokesperson declined requests for interviews with Musk or other executives.

Some observers caution that the appearance of competing technologies can be misleading. They say the need for clean transportation won't necessarily be found in a single system. "If you have a fuel cell car, you have a longer range between visits to the gas station; but if you plug in at home, you never have to go to the gas station at all," said Don Anair of the Union of Concerned Scientists. "It's an either-or proposition. It's a both-and proposition."

California is at the leading edge of advancing the fuel cell movement. The state Legislature passed AB 8 late last year, dedicating \$100 million a year through 2023 to finance the construction of as many as 500 hydrogen fueling stations.

There are only 12 such stations in California now, though that number could increase to 40 stations within a year.

Automakers and station owners have little incentive to invest without government subsidies to develop cars and stations.

"Without government support, this is not a viable business," Poppe said.

Until the nascent technology goes mainstream, hydrogen station operators like Poppe — who's such a believer in the technology that he and his wife both drive Mercedes-Benz B-Class fuel cell cars — must wait for their businesses to become profitable. His Burlingame station serves 10 or

20 cars a day; he needs at least 30 to recoup his investment.

Experts put the price of building a single hydrogen fueling station, excluding the cost of the real estate, at about \$2 million. A single nozzle at his Burlingame station costs \$1,000, Poppe said.

That's expensive, but so are gasoline stations — along with the drilling and refining operations that feed them.

"We could put in a nationwide network of [hydrogen] stations for less than the cost of building the Alaska pipeline," said Charlie Traess, head of the fuel cell vehicle program for GM. "There are a lot of other hidden costs too, like the cost of keeping the [station] if it's not open."

NBC NEWS Oct. 14, 2015

## Toyota to Phase Out Gas-Powered Vehicles, Doubling Down on Hydrogen

by Paul A. Eisenstein

Toyota Motor Co. wants to virtually eliminate gasoline-powered vehicles from its fleet by 2050, and is betting that hydrogen cars, rather than electric vehicles, will be the long-term answer.

The Japanese maker recently introduced the Mirai, its first retail fuel-cell vehicle, and though sales have so far been measured in the hundreds, the target is to reach 30,000 annually by 2020, and even higher in the years beyond.

A number of other automakers are experimenting with hydrogen power; Hyundai already offers a fuel-cell version of its Tucson SUV, and Honda will launch a retail model next year.

While most competitors are focusing on hybrids, with a heavy emphasis on battery-based models, Toyota remains skeptical about the long-term role of electric vehicle technology.



Japanese auto giant Toyota Motor's hydrogen fuel-cell vehicle Mirai is displayed in Tokyo in November 2014. YOSHIKAZU TSUNO / AFP - Getty Images



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Congress of the United States  
Washington, DC 20515

April 18, 2013

The Honorable Rodney P. Frelinghuysen  
Chairman, Energy and Water Appropriations Subcommittee  
U.S. House of Representatives  
Washington, DC 20515

The Honorable Marcy Kaptur  
Ranking Member, Energy and Water Appropriations Subcommittee  
U.S. House of Representatives  
Washington, DC 20515

Dear Chairman Frelinghuysen and Ranking Member Kaptur:

As Members of Congress with a strong interest in fuel cell and hydrogen technology, we thank you for consistently funding the FC&H2 Energy (DOE). We are writing to urge your continued robust inclusion of fuel cell and hydrogen technologies in the FY2014 Energy and Water Appropriations bill. Fuel cell and hydrogen programs create jobs, stimulate exports, increase the efficient use of resources, reduce dependence on foreign oil and enhance energy air pollution and greenhouse gas emissions.

As the Committee develops the FY2014 Energy and Water Appropriations bill, we request that you support \$147.8 million for the fuel cell and hydrogen energy programs managed by the Office of Energy Efficiency and Renewable Energy (EERE); and \$50 million for the Solid State Energy Conversion Alliance (SECA) solid oxide fuel cell program in the Office of F

Sincerely,

John B. Larson  
JOHN LARSON  
Member of Congress

Michael Doyle  
MICHAEL DOYLE  
Member of Congress

JUDY CHU  
Member of Congress

## Congress of the United States Washington, DC 20515

Fuel cell and hydrogen technologies create jobs and are a crucial part of the portfolio of advanced energy technologies that will help achieve the nation's oil and greenhouse gas reduction goals. Fuel cells for stationary power and material handling equipment are becoming commercially available in niche markets and creating jobs today in domestic and export-oriented

As the Committee develops the FY2014 Energy and Water Appropriations bill, we request that you support \$147.8 million for the fuel cell and hydrogen energy programs managed by the Office of Energy Efficiency and Renewable Energy (EERE); and \$50 million for the Solid State Energy Conversion Alliance (SECA) solid oxide fuel cell program in the Office of F

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