

Senate Hydrogen and Fuel Cell Caucus
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Remarks of Catherine Dunwoody
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The California Fuel Cell Partnership is a diverse group of industry and government members that have worked together since 1999 to commercialize fuel cell vehicles in order to promote a more sustainable transportation future.

CaFCP members, including automakers, oil companies, fuel cell manufacturers and government agencies, know that zero-emission fuel cell vehicles powered by hydrogen will help improve local air quality. FCVs also reduce transportation's carbon footprint, even when producing hydrogen from natural gas. The potential for zero-carbon hydrogen is tremendous, and the subject of our briefing today. California needs low- and zero-carbon hydrogen for fuel cell vehicles in order to meet our goal of reducing greenhouse gas emissions 80% below 1990 by 2050. Because hydrogen can be produced from a diversity of domestic sources, this fuel will reduce and ultimately eliminate our current dependence on petroleum for the transportation sector.

To make a difference in the environment and our energy security, vehicles will have appeal to the mass market. People will not accept less simply because its greener. Fuel cell vehicles are family-friendly, full-function vehicles that people will want to buy and drive.

Automakers are building and developing a portfolio of vehicles that are clean, cleaner and cleanest. Many voices in the press and in the public believe that clean or cleaner is good enough. They argue that because it's difficult to assess how fuel cell vehicles will ultimately roll out, we shouldn't even get started.

But we have started—and made tremendous progress. The automotive members of the California Fuel Cell Partnership—nine major OEMS—have placed more than 200 fuel cell vehicles in California in models ranging from small commuter cars to full-size sedans and SUVs. Three California transit agencies are operating buses in daily revenue service. Together, these vehicles have driven more than 1.6 million miles and carried thousands of passengers.

The vehicles get their hydrogen from 25 stations currently operating in California. These stations have served the fleet demonstrations very well, but most of them are not well-suited to the next phase. The stations are often located behind a gate, require special use agreements, training or equipment, and in many cases may be used by only one or two automakers or for limited operating hours.

Vehicles and stations have made progress towards the challenges of cost, durability and range. CaFCP members are ready to take it to the next level...placing larger numbers of vehicles with early customers. The important question now is – will hydrogen fuel stations meet the demand of the thousands of vehicles that are coming? And we know that they are coming.

On March 27, the California Air Resources Board made adjustments to their ZEV regulation. You may have heard about dramatic reductions to the required numbers of “Gold” vehicles, namely FCVs or full-function battery electric vehicles. In reality, the Board did not change the overall requirements, but provided additional flexibility for OEMs to meet the requirements by making significant numbers of vehicles in a new category, “Silver+,” namely plug-in hybrid vehicles or vehicles that combust hydrogen.

Depending on how the automakers choose to meet the requirements, we expect to have between about 5,300 and 25,000 fuel cell vehicles operating in California by 2014. OEMs can choose to build 58,000 “Silver+” vehicles and a lower number of “Gold,” or build a higher number of “Gold” vehicles. In a state with 28 million cars and light trucks, 5,300 to 25,000 fuel cell vehicles may not seem like a lot. But it is many times more than we have today, and in just six short years.

The California Air Resources Board’s Zero Emission Bus regulations require transit agencies that operate more than 200 buses purchase zero-emission buses. Beginning in 2011-2012, those agencies will have to make 15% of their new bus purchases ZEBs. California could have more than 200 operating fuel cell buses by 2015.

The vehicles are coming, to be sure. We can’t just sit back and hope that stations are coming—we have to make sure that the hydrogen supply is there. Transit agencies will need large-capacity stations to support growing fuel cell bus fleets. Buses hold around 45 kg (about the same as 45 gallons) in their fuel tanks, and depending on the route and hours of operation, may use much of that each day.

For light-duty vehicles, CaFCP’s focus is to provide retail-like, customer-friendly hydrogen fuel stations in the first vehicle markets, which have been identified by our automaker members as four Los Angeles regions: downtown LA, West LA, Santa Monica and the San Fernando Valley. The OEMs will also target other large urban areas, such as SF/Sacramento areas and a few East Coast areas for certain. It’s important to demonstrate early market success in focused markets, and then roll out the vehicles and stations to other cities and states. To get started we are working to deploy 750 kg/day of additional hydrogen supply at stations in the Los Angeles region by 2010. This is just the first installment of a much larger network needed beginning in 2012 when the large numbers of FCVs will start to deploy.

California has made a commitment to building an initial network of hydrogen fuel stations, and has allocated \$19 million to the California Hydrogen Highway Network to date. The California Air Resources Board recently issued a Request for Proposal for new and upgraded hydrogen stations with funding of \$7.7 million to cost-share 3 to 5 stations. Under recent legislation, SB 1505, state funded hydrogen stations must meet environmental performance requirements that encourage renewables and low-carbon production methods. Although we know that hydrogen from conventional sources, such as natural gas, is good for the environment today, California needs very low or zero carbon hydrogen solutions for the future

It's hard to change a 100-year-old system. But we do see signs of progress and success. The newest H2 station in California is a true, zero-carbon hydrogen station at SMUD. They make their hydrogen from solar power! And later this year Shell will complete the first retail hydrogen fuel station in the state. I'm very fortunate to be a fuel cell vehicle driver. I've driven almost 4000 miles in fuel cell vehicles over the past year. When I'm shopping or taking my kids to school, I talk to many people who are eager for an alternative to their gasoline car. I myself prefer not to drive my gasoline car because I like how the fuel cell vehicle performs so much better. As more and more people experience this new technology, I think we will find they are ready to start this change.

Fuel cell buses have been a tremendous success. In the AC Transit service territory in Oakland, CA, people will let a diesel bus pass them by because they know the next bus is a clean, quiet, zero-emission fuel cell bus. These vehicles are already improving urban air quality, reducing carbon and getting almost twice the fuel economy of a diesel bus (6.97 mi/diesel gallon equivalent vs. 4.01 mi/gallon for comparable diesel buses) in an eight-month evaluation conducted by NREL.

California Fuel Cell Partnership members are committed to hydrogen and fuel cell vehicles. But we need support on all fronts as we transition to a commercial market. It won't be easy. But it will be worth it. And we can do it. Please come visit us in California to see for yourselves.