

County of Santa Clara
Office of the County Executive
Office of Budget and Analysis




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DATE: August 19, 2005

TO: Supervisor Pete McHugh, Chairperson
Supervisor James T. Beall, Jr., Vice-Chairperson
Finance & Government Operations Committee

FROM: 
Gary A. Graves
Chief Deputy County Executive

SUBJECT: Quarterly Status Report on Fuel Cell Advancement Initiative Adopted by the Board of Supervisors on September 14, 2004.

RECOMMENDED ACTION

Accept status report on advancement of Fuel Cell Initiative adopted by the Board on September 14, 2004.

FISCAL IMPLICATIONS

Acceptance of this report will not impact the General Fund. It is anticipated that any future funding to support this effort will come from grants and other forms of outside funding.

REASONS FOR RECOMMENDATION

This report is provided as an update on the progress that has been made toward the

advancement of fuel cell use in Santa Clara County in the areas of Legislation, Vehicles, Buildings and Planning. The last status report to the Finance and Government Operations Committee was on April 6, 2005.

LEGISLATION

The FY 2006 proposed Federal Earmark requests were approved by the full Board on February 28, 2005. An Earmark request for Fossil Energy Research and Development funds in the amount of \$2,500,000 was submitted to Senators Feinstein and Boxer and Congressman Honda on March 1, 2005, to fund fuel cell power generation demonstration projects at Vasona County Park and at another County facility. The Vasona Park site would be co-located with the Youth Science Institute (YSI). The fuel cell installation would generate power for a building to be constructed by YSI, produce hydrogen for use in County fleet vehicles, and be fully integrated into YSI's K-12 science education curriculum. An additional fuel cell demonstration project site would be chosen, with potential sites including 24/7 facilities such as Elmwood Jail, the County's 911 Communications Center, or various Health and Hospital facilities. The funding announcement for Earmark requests will be made sometime between October 2005 and March 2006.

Your Board has sent two support letters on AB 1660 (Pavley). AB 1660 would require the State Department of General Services to partner with counties, cities, and school districts to create a statewide government group purchase program that would negotiate the lowest possible purchase price for alternative fuel and hybrid vehicles. This measure requires the Director of General Services to establish an advisory committee consisting of representatives from organizations included in this partnership, no later than April 1, 2006. The first letter of support was sent to the Assembly Appropriations Committee on May 3, 2005 and the second letter of support was sent to the Senate Government Modernization Committee on June 8, 2005. The bill is scheduled to be heard in the Senate Appropriations Committee on August 15, 2005.

VEHICLES

The County of Santa Clara Fleet Management Department continues to focus on alternative fuel vehicles and emissions reductions. An element of the strategic fleet plan for the department is to review pending legislation that will affect future purchase decisions, as well as costs attributed to the current fleet to meet compliance standards.

The present County Fleet includes 39 Hybrid Vehicles, 50 Neighborhood Electric Vehicles, 26 Electric Forklifts and Electric Taylor Dunn Carts and 9 Propane Forklifts. All are light duty for a total of 124 Alternate Fuel Vehicles.

Hybrid Vehicles

Fleet Management was awarded a rebate in the amount of \$10,000 from the Bay Area Air Quality Management Department (BAAQMD) for purchasing hybrid vehicles. The Government Account Manager for Ford Motor Company has notified Fleet Management that a Model Year 2006 Ford Escape Hybrid will be delivered to the County by August

20, 2005. This particular model is one of the new Sport Utility Vehicle (SUV) style hybrid vehicles. We will have use of the vehicle for demonstration to various County Departments. The Department of Environmental Health received grant funds to purchase a vehicle to assist with the enforcement of waste tire disposal. The Department of Environmental Health intends to purchase a hybrid vehicle and will consequently qualify for an additional \$2,000 rebate.

The Roads Department has four hybrid vehicles (included in the count above) and has realized \$8,000 in grant (rebate) funds for purchasing these vehicles. While the Department is not currently purchasing any vehicles (due to budget constraints), Roads Department staff have developed replacement plans which call for the procurement of only hybrid vehicles when pool vehicles are retired and replaced. In addition, the Roads Department has eight SMART (electric) vehicles.

Hybrid Electric Vehicle Conference Call

On June 15, 2005, Fleet Management attended a conference call sponsored by the Center for a New American Dream. The purpose of the call was to inform local officials, public and private purchasers, and fleet managers about ways to incorporate new energy-efficient electric light duty vehicles in fleets. The call covered issues relevant to California jurisdictions, including program and policy initiatives. This call was co-sponsored by the California Association of Counties and the Union of Concerned Scientists. During the call, a variety of subjects was discussed, including a discussion about the State Initiative (AB 1660) to expand the use of hybrids in public fleets and consolidating the purchasing opportunities for local governments. The California Air Resources Board and the California Department of General Services hosted this portion of the call.

A vehicle lifecycle calculator will be available in September, 2005 to assist fleet departments in comparing the cost of a hybrid against standard vehicles by class. Hybrid sales continue to be strong and as a result, most manufacturers do not offer fleet incentives. AB 1660 would allow for a more competitive bid process to generate lower costs to municipal fleets.

Particulate Matter

The California Environmental Protection Agency, in conjunction with the California Air Resources Board (ARB), has identified particulate matter (PM) pollution as one of California's highest public health priorities. PM consists of small liquid and solid particles suspended in the air. Particles smaller than 10 microns in size are known as PM10.

The Legislature passed Senate Bill 656 in 2003 to reduce public exposure to PM10. The legislation requires the ARB, in consultation with local air pollution control and air quality management districts, to adopt a list of the most readily available, feasible and cost-effective control measures that could be implemented by air districts to reduce PM10. The list of air district control measures was adopted by ARB on November 18, 2004. The ARB also developed a list of State PM control measures for mobile and stationary sources, including measures planned for adoption as part of ARB's Diesel Risk Reduction Plan.

Within the Diesel Risk Reduction Plan, both on-road and off-road diesel vehicles are identified as PM10 producers. The County owns approximately 231 diesel vehicles: 200 Roads vehicles and 31 trucks and buses. The buses are used to transport prisoners.

Engine manufacturers are mandated to provide equipment that meets the new emissions requirements by 2007 model year. It is estimated that the new standards will increase engine costs by \$7,000 per vehicle.

A conference sponsored by ARB is scheduled for August 15, 2005 to address pending legislation that is expected to require existing diesel vehicles to meet new reduced PM emissions standards no later than January, 2007 by installing retrofit devices. Retrofit devices are identified, tested and certified for compliance by ARB and BAAQMD. Selection of catalytic exhaust versus Diesel Particulate Matter (DPM) traps is contingent on duty cycle, run time, idle time, and exhaust temperature. In addition, the device must be compatible with the engine year, make and model.

Fleet Management, working in conjunction with BAAQMD and retrofit vendors, opted for the catalytic exhaust trap for 31 of its non-Roads vehicles. This system will be compliant for anticipated legislation. BAAQMD has awarded the County \$63,000 for 21 vehicles to be retrofitted with PM traps. BAAQMD has reserved another \$80,000 for 10 other Santa Clara County vehicles that are currently undergoing evaluation to determine which certified PM trap is required. Santa Clara County has received letters of confirmation from both BAAQMD and the retrofit vendors that funds will be paid by BAAQMD directly to the vendor on behalf of Santa Clara County to perform the retrofit work on those County vehicles. Installation of the 31 retrofit devices will occur during September – December, 2005.

The Roads Department is in the process of finalizing an application for submittal to BAAQMD for reimbursement of the estimated \$600,000 in retrofit costs of the 200 Roads diesel-fueled vehicles. It is anticipated that full reimbursement will be possible through grant funding.

Ultra Low Sulfur Diesel (ULSD) fuel is required for PM traps to function effectively. Refineries are required to have nationwide production and availability by September, 2006. Santa Clara County Fleet will have ULSD fuel by September, 2005.

Hydrogen-Fueled Demonstration Vehicle

An information-exchange workshop was hosted jointly by Santa Clara County and the California Fuel Cell Partnership on May 6, 2005. The workshop was held at the County Center at Charcot and was attended by elected officials, administrators and planners from regional cities and counties. The workshop included a presentation by the Santa Clara Valley Transportation Authority (VTA) of the Zero-Emission Bus Demonstration Program, information about California's Hydrogen fueling stations and demonstrations of Hydrogen Fuel Cell vehicles by DaimlerChrysler, Nissan, and Toyota. California currently has 16 Hydrogen Fueling Stations in operation throughout the State and another 5 in the planning stages. At the fueling stations, liquid hydrogen is compressed, vaporized into a gas and then moved into a separate tank for use in the three hydrogen-powered VTA buses. VTA has agreed to negotiate with Santa Clara County for use of the fueling station to supply hydrogen for use in the County's future demonstration vehicles.

The County's Fleet Manager, Dave Snow, has submitted a letter of intent to acquire a hydrogen fuel cell vehicle (HFCV) for demonstration in the County. The letter of intent was submitted to the California Fuel Cell Partnership (CaFCP) on July 21, 2005. The CaFCP will forward the letter to eight HFCV manufacturers and continues to offer the County support for participation in the Hydrogen Highway effort.

The CaFCP believes that Santa Clara County is an excellent candidate for a demonstration vehicle as there are currently 3 hydrogen refueling stations within 60 miles of the County, and 2 more within 120 miles. One is located in Santa Clara County at 3990 Zanker Road in San Jose. The County has more than 40 Emergency Responders trained to handle hydrogen vehicle and refueling issues. Community outreach programs and public awareness campaigns are underway in support of the VTA fuel cell bus demonstration.

BUILDINGS

Information-exchange meetings were held on April 1 and April 15, 2005.

On April 1, 2005, representatives from Ion America shared information about their commercial solid-state systems that will produce reliable power for buildings at a competitive cost when compared to grid power. This company has several 5 kW systems working as demonstration projects that produce electricity for the company's building and hydrogen for its vehicles.

On April 15, 2005, a representative from Plugpower Fuel Cell Systems shared information about hydrogen-powered back-up power sources for buildings. The hydrogen-powered back-up generators would replace lead acid batteries of existing back-up generators. The Facilities and Fleet Department is conducting a cost-benefit analysis of the product in comparison to the County's existing back-up generators.

PLANNING

The Administration received a letter on July 18, 2005, from the State Department of Transportation (CALTRANS) explaining that Santa Clara County was not selected for grant funding for the planning of a fuel cell demonstration project and education program. The Administration plans to submit a proposal for the FY 2007 grant cycle.

Without further Board direction, the Administration does not have the authority to utilize General Fund resources in this effort. As a result, little progress can be made if grant funds are not received.

BACKGROUND

The following chronological history provides a summary of activities in support of fuel cell advancement since the adoption of the initiative.

09/14/04 – Board adopted Santa Clara County Fuel Cell Advancement Initiative (Attachment A)

10/15/04 – Application for CALTRANS Planning Grant submitted

10/19/04 – Board approved Work Plan framework

01/09/05 – Mercury News Article – "A New Energy, Silicon Valley players are on the hunt for breakthroughs in alternative-power technology—and venture capitalists are taking notice"

01/28/05 – Presentation to Fuel Cell Working Group by Chevron Texaco and FuelCell Energy, Inc.

03/01/05 – Board approved status report

03/01/05 – Administration submitted \$2.5 million Earmark request

04/01/05 – Presentation to Fuel Cell Working Group by ION America

04/15/05 – Presentation to Fuel Cell Working Group by Plugpower

Fuel Cell Systems

04/19/05 – Board approved status report and delegated authority to Facilities and Fleet to submit letters of interest to acquire a demonstration fuel cell vehicle

05/06/05 – Joint presentation — County of Santa Clara and California Fuel Cell Partnership presented hydrogen demonstration vehicles and information to regional public and private participants

05/23/05 – Mercury News Article – "Jump-starting the Hydrogen Car Dream"

07/18/05 – Received rejection letter from CALTRANS Planning Grant

07/21/05 – Letter of interest to acquire a fuel cell vehicle submitted to OEM (Operating Equipment Manufacturers) Members of the California Fuel Cell Partnership

08/19/05 – Status report to FGO

ATTACHMENTS

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- Fuel Cell Advancement Initiative