



City of Sacramento City Council

915 I Street, Sacramento, CA, 95814
www.CityofSacramento.org

Meeting Date: 2/15/2011

Report Type: Staff/Discussion

Title: Electric Transportation Update

Report ID: 2011-00074

Location: Citywide

Recommendation: Receive and file.

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Presenter: Keith Leech, Fleet Manager, 808-5869, Department of General Services; Bill Boyce, SMUD Supervisor, Electric Transportation, SMUD

Department: General Services Dept

Division: Fleet Management

Dept ID: 13001211

Attachments:

1-Description/Analysis

2-Background Information

3-Regional Plug-In Electric Vehicles City Council PowerPoint Presentation

City Attorney Review

Approved as to Form
Jerry Hicks
2/1/2011 1:55:17 PM

City Treasurer Review

Prior Council Financial Policy Approval or
Outside City Treasurer Scope
Russell Fehr
1/20/2011 3:31:22 PM

Approvals/Acknowledgements

Department Director or Designee: Reina Schwartz - 1/27/2011 12:53:40 PM

Assistant City Manager: Patti Bisharat - 1/31/2011 5:58:23 PM



Description/Analysis

Issue: This report provides information to the Mayor and City Council about the City's participation in a Department of Energy Federal Stimulus partnership for vehicle electrification with Sacramento Municipal Utility District (SMUD) and other regional entities.

Policy Considerations: Not applicable

Environmental Considerations:

California Environmental Quality Act (CEQA): The Environmental Services Manager has determined that this information only report regarding City participation in a Department of Energy Federal Stimulus partnership for vehicle electrification with SMUD and other regional entities is exempt from the requirements of the California Environmental Quality Act (CEQA), pursuant to Section 15061(b)(3) of the CEQA guidelines. Exemption 15061(b)(3) consists of an activity covered by the general rule that CEQA applies only to projects which have the potential for causing a significant effect on the environment. Where it is certain that there is no possibility that the activity in question may have a significant effect on the environment, the activity is not subject to CEQA.

Sustainability: Electric vehicles support sustainability by reducing greenhouse gas emissions and reduced tailpipe emissions by burning less or no petroleum per mile driven.

Commission/Committee Action: Not applicable

Rationale for Recommendation: In 2010, the Department of Energy offered a federal grant of \$2.4 billion for electric batteries and infrastructure to support electric vehicle rollouts in various cities across the United States. Sacramento, as a recognized electric transportation leader, has been targeted by Nissan Leaf and Chevrolet Volt as an early launch market with an estimated 300-500 vehicles expected for purchase in 2011. As a result, there is a strong push for supporting electric vehicle charging infrastructure. The California Energy Commission is also supporting electric vehicle infrastructure installations through the AB118 Program to support alternative fuel infrastructure and production within the state. Attachment 1 provides additional background information.

In February 2009, SMUD, acting as the regional lead, formed a regional team to support multiple automaker proposals regarding federal solicitations on electric vehicles. General Motor (Chevrolet Volt) and Chrysler (PHEV) Ram pick-up truck were selected. Automakers completed negotiations with U.S. Department of Energy in spring 2010, with automaker prime partner negotiations completed in late December 2010 and early January 2011. SMUD regional partner agreements are now ready for negotiation.

Regional Infrastructure Planning

Fleet Management, Facilities Management, Parking Management, and SMUD staff have been in the process of conducting extensive research on the possibility of retrofitting existing charging infrastructure as well as installing new charging infrastructure, in existing City parking

garages. Research suggests that 80% of actual charging will take place at home. Downtown parking garages have been identified as the best locations for public charging while at work or in the City on other business. Charging stations will reduce “range anxiety,” the fear of not having enough battery power to complete a trip.

SMUD and City staff are coordinating electric vehicle supply equipment (EVSE) project planning with two vendors who are grant recipients, Clipper Creek and Coulomb, to provide EVSE. Clipper Creek has both federal and state funding targeted for retrofits of existing infrastructure, while Coulomb has both federal and state funding focused on new installs. Both vendors would like to have most installs completed by the second quarter of 2011.

By taking steps toward accommodating electric vehicle use, the City of Sacramento continues to advance our sustainability goals including the reduction of our carbon footprint.

Financial Considerations: The installation and retrofitting of up to 60 charging stations in City parking garages and City Fleet Management locations will be contingent on the identification of City facilities that already have sufficient electrical service capacity to accommodate them. SMUD and City Facilities Management staff are analyzing the existing electrical service at multiple City facilities to identify potential locations for the installation of charging infrastructure that maximizes the current Federal and State grant opportunities within each of the grant project’s funding eligibility constraints. The City will be responsible for the operations and maintenance (O&M) costs which are currently unknown given the lack of data on new equipment. It is anticipated that during the pilot implementation of these projects, the O&M costs will be forecast and budgeted annually in the Parking Enterprise and the Fleet Internal Service Funds.

The City’s participation in the two SMUD sponsored U.S. DOE ARRA Plug-in Hybrid Electric Vehicle demonstration projects (Chevrolet Volts and Chrysler Ram trucks) will include providing in kind support, including equipment installation and data collection. These costs will not exceed \$100,000 and will be funded from the Fleet Internal Service Fund Operating and Capital Improvement Project (CIP) available budgets.

Emerging Small Business Development (ESBD): No goods or services are being purchased as a result of this report.



BACKGROUND INFORMATION

SMUD and the City of Sacramento are working together on two U.S. DOE ARRA Plug-in Hybrid Electric Vehicle demonstration projects (Chevrolet Volts and Chrysler Ram trucks) to test and gather data on plug-in electric vehicles in fleet use. The City of Sacramento will receive five Chevrolet Volts and five Chrysler Ram 1500 pickup trucks during the two-year demonstration projects. SMUD is working with City of Sacramento Fleet Management staff to determine the most effective deployment of the vehicles and the installation of electric vehicle service equipment (chargers). As a partner organization, the City of Sacramento will be asked to supply in kind support.

General Motors and Chrysler each received funding through the federal Department of Energy ARRA grants to support the deployment of plug-in electric vehicles. SMUD was selected by the two vehicle manufacturers because of SMUD's extensive experience and history with electric vehicle development projects. SMUD staff is working with Fleet Management staff to ensure the appropriate placement of the vehicles and to site the electric vehicle supply equipment (chargers) that will accompany them. During the demonstration period, vehicle performance data will be collected to determine the vehicles' real world performance and to determine the impact of vehicle charging on the electrical grid.

The primary goal is reduction of petroleum consumption and greenhouse gasses. The demonstration program will help accelerate the introduction of electric and plug-in hybrid vehicles, help cut emissions, and reduce petroleum fuel use.

Electric Vehicle Supply Equipment (EVSE) Vendors

Clipper Creek has been in existence since the 1990's. Their focus is primarily retrofitting of existing charging stations as they have the ability to easily update existing charging boxes. Clipper Creek has received California Energy Commission (CEC) funding that allows for 100% funding of municipalities through the AB118 Program, for the retrofitting of existing infrastructure.

Coulomb has been in existence since 2007. Their focus is primarily new installs, new public construction, and residential locations. Coulomb's funding is primarily from a Department of Energy grant in the amount of \$37 million (with \$22 million in match commitments). Coulomb also received CEC funding for installation of charging stations. \$1.4 million has been provided specifically to municipal governments for installation. Approximately 260 units are targeted for Sacramento (approximately 150 public units). Their focus is a nine metro area program. Phase 1 is underway through December 31, 2011.



Regional Plug-in Electric Vehicle Activities

**Briefing to
Sacramento City Council
2/15/2011**

Summary of Regional Plug-in Vehicle Activities

- **Sacramento is a Nissan Leaf and Chevy Volt early launch market**
 - **Vehicles started hitting the roads just before Christmas**
 - **Upward of 300 vehicles expected by the end of the year**
 - **Other automakers launching vehicles in 2012**
- **Sacramento teaming with automakers for U.S. DOE ARRA Projects**
 - **SMUD lead team with other Government Institution partners**
 - **Vehicles and fleet demonstration charging infrastructure**
 - **California Energy Commission match funding**
- **Charging Infrastructure grants also supporting the area**
 - **Coulomb Technologies**
 - **Clipper Creek**
- **Sacramento is a recognized electric transportation leader!**

Demonstration Effort Background

- **SMUD formed a regional team to support multiple automaker proposals regarding federal solicitations on electric vehicles (2/2009)**
 - **SMUD acting as the regional lead**
 - **Additional California Energy Commission matching funds sought**
- **Two of the automaker teams were selected for awards (8/2009)**
 - **General Motors (Chevy Volt)**
 - **Chrysler (PHEV Ram pick up truck)**
- **Automakers completed negotiations with U.S. DOE in Spring of 2010**
- **Automaker-prime partner negotiations completed in late December 2010 early January 2011 (significant scope changes from original proposal)**
- **SMUD-regional partner agreements now ready for negotiation**

General Motors Project Details

- **General Motors is the prime contractor**
 - **11 Industry Partners (11 Utilities and 1 R&D Group)**
 - **Nationwide reach with partners**
- **Sacramento Regional Scope**
 - **29 Chevrolet Volts / 24 month demonstration effort**
 - **City of Sacramento getting 5 Volts**
 - **\$4M total effort (\$2M DOE, \$1.45M Partners, \$.55M CEC)**
 - **Charging Infrastructure for direct fleet support**
 - **Advanced Charging Research**
 - **Regional Permitting and Codes Harmonization**
 - **Multi-family Dwelling Survey and Cost Model**
 - **Market Readiness Support**

Chrysler Project Details

- **Chrysler is the prime contractor**

- **12 Industry Partners**
 - **(2 Utilities and 1 R&D Group)**
- **Nationwide reach with partners**

- **Sacramento Regional Scope**

- **15 Ram Pick ups/ 24 month demonstration**
- **City of Sacramento 5 Ram Pickups**

- **\$400K (\$200K DOE, \$100K CEC, \$100K Partners)**

- **Charging Infrastructure for direct fleet support**

- **Advanced Charging Research**

- **Auxiliary Power Supply**



Regional Infrastructure Planning

- **Infrastructure Grant Support**

- Clipper Creek scope for existing unit retrofits
- Coulomb scope for some new buyers and other public sites

- **Regional Planning Charrettes with Stakeholders**

- New charging infrastructure placement for driver support
- Supports future proposal efforts for funding opportunities

- **Regional Building Codes and Permitting**

- Commonality to support expedited installation activities
- Notification Protocols for grid impact planning
- Revival of EV ready building codes for new construction

Summary

- **Sacramento is very active regarding electric transportation**
- **Early Launch Market for many automakers**
- **Retrofit of existing charging network will provide a good head start for driver support**
- **Grant opportunities leverage outside funding to support efforts**
- **Electricity is finally emerging for a clean alternative transportation fuel**