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AGENDA REPORT

TO: Sabrina B. Landreth
City Administrator

FROM: Brooke A. Levin
Director, Public Works

SUBJECT: An Informational Report On Solar
Power And Electric Vehicle Charging
Infrastructure At City Facilities

DATE: December 21, 2015

City Administrator Approval

Date:

12/29/15

RECOMMENDATION

Staff Recommends That The City Council Receive An Informational Report On Solar Power And Electric Vehicle Charging Infrastructure At City Facilities.

EXECUTIVE SUMMARY

This informational report provides an update on the solar photovoltaic (Solar PV) power project and development of the electric vehicle charging station project at City facilities.

City facilities have 999 kilowatts (kW) of Solar PV generation equipment. Oakland Public Works (OPW) is developing more solar power generation with a solicitation of proposals for several hundred kW of Solar PV. Staff is currently analyzing proposals received in October 2015.

OPW has three electric vehicles and seven publicly accessible charging ports at two City parking garages. OPW is adding two more charging ports at the Municipal Service Center (MSC) and pursuing grants to fund electric vehicle charging system projects.

BACKGROUND / LEGISLATIVE HISTORY

Solar Power: On December 4, 2012, through approval of Resolution No. 82146 C.M.S, the City Council adopted an Energy and Climate Action Plan (ECAP). The ECAP established a goal of adding 62 million kilowatt-hours (kWh) of annual renewable electricity production citywide by 2020, inclusive of municipal facilities, for which no specific goal was set. In March 2013, through adoption of Resolution No. 84219 C.M.S, the City Council authorized the City Administrator to implement a solar power procurement project by joining Alameda County's Regional Renewable Energy Procurement (R-REP) program, and to enter into a Power Purchase Agreement (PPA) for a nominal annual 500,000 kWh of electricity generation for 20 years.

Item: _____
Public Works Committee
January 12, 2016

Electric Vehicle Charging: ECAP Priority Action 37, which specifies that the City will plan for and implement electric vehicle infrastructure, provides the direction to focus efforts on adding new charging stations at municipal facilities.

ANALYSIS

Solar Power at City Facilities

Although funding has not generally been sufficient to include Solar PV in municipal construction projects, OPW has been planning for the addition of Solar PV to its facilities since 2002, by incorporating solar-ready roofs into new building and major remodeling projects, such as Fire Stations 8 and 18, Studio One, and the 81st Avenue Library. In 2005, before the adopting the ECAP, the City completed its first solar power project, installing a combined 999 kW of Solar PV equipment at the Municipal Service Center (MSC) and the Oakland Ice Center.

In 2011, Alameda County created R-REP as a regional collaboration of 19 agencies throughout the Bay Area, to provide essential resources for agencies with limited staff, speed project development, and achieve economies of scale that would minimize project development and implementation costs. To date, R-REP has helped complete 13,100 kW of solar projects among its 19 participating agencies, and aims to develop a total of over 22,000 kW of projects.

In 2012, staff evaluated 90 City facilities for Solar PV suitability, determining that at least 15 sites had rooftops that can support solar panels and were good candidates for buying solar power through a PPA at costs that are lower than the City would otherwise pay Pacific Gas and Electric Company (PG&E) for the same electricity. In 2013, the City joined R-REP to continue adding Solar PV to its facilities, including libraries, recreation centers, fire stations, senior centers and corporation yard.

First R-REP Solicitation

R-REP published a Request for Qualifications (RFQ) in September 2013, including 74 City of Oakland sites. Seventeen of the City's sites had low enough estimated PPA costs to justify reserving rebates with the California Solar Initiative (CSI), which cost \$25,000. The remaining 57 sites had issues that made them less attractive for PPAs, such as the cost of roof replacements that would be necessary before installing solar panels. In October 2013, an Evaluation Committee composed of staff from participating agencies, including the City of Oakland, selected 17 qualified contractors from among 20 responses to the RFQ. Next, R-REP issued a Request for Proposals (RFP) for 186 sites, on behalf of the participating agencies, to the qualified contractors.

When contractors submitted proposals in response to the RFP in January 2014, R-REP received only two proposals that included City of Oakland projects; only one of those proposals complied with enough of the published criteria to be approved for further consideration. In March of 2014, after reviewing, scoring and ranking the proposals, the Evaluation Committee delivered its recommendation for contractors that participating agencies should invite to contract negotiations, which the Alameda County Board of Supervisors approved in April 2014. R-REP recommended that the City negotiate with the sole approved contractor.

The City initiated negotiations and conducted site visits with the approved contractor. However, at critical times, the contractor failed to engage in negotiations at a pace that would achieve the mandatory CSI milestone for executing contracts. The contractor cited an inability to submit timely prices for scope refinements, and meeting the City's stated insurance, local employment and local business enterprise requirements. The City terminated negotiations with this contractor in July 2014, as did Alameda County. Subsequently, the City was unable to show sufficient progress to retain the 17 CSI rebate reservations.

Second R-REP Solicitation

R-REP issued a second solicitation to qualified contractors in November 2014, which did not elicit any proposals for the 25 sites included by the City. After this second solicitation, staff met with all of the R-REP-qualified contractors interested in discussing City projects to better understand the reasons they did not propose on City projects. These contractors identified the factors they viewed as impediments to submitting proposals.

The most distinctive factor that suppressed contractor interest in City projects was project size. Several contractors said that the City's projects, ranging from approximately 6 kW at Fire Station 27 to 250 kW at the MSC were too small. These contractors were organized to build 500 kW to 5,000 kW projects, and weren't structured to handle the kinds of projects the City was offering at fire stations, libraries, and senior centers. Some contractors were strongly influenced by the looming expiration of the federal investment tax credit on December 31, 2016, and pending utility requests at the California Public Utilities Commission that would create less favorable electricity rates for Solar PV projects. These contractors were trying to complete as many projects as possible while conditions remain favorable, focusing on projects that were simple and large. As a result of these market factors, the approximately 250 kW project at the MSC was only attractive to a small number of contractors. However, their interest was diminished by the complexity and potential cost of placing the solar panel atop tall carports that accommodate truck movement, and building foundations on ground with a high water table and soil that may require special handling.

Beyond the MSC, all of the City's other sites were small, and only attractive to a small number of R-REP contractors. Of the sites that attracted contractor's interest, the second-largest site was the approximately 50 kW project at the 81st Avenue Library, and the remaining attractive sites were even smaller. None of the contractors were interested in the Civic Center sites. City Hall's tower shades its small rooftops, the Dalziel Building is on a special circuit that requires prohibitively costly controls to safely export electricity onto the grid, and the Wilson Building is too tall to run power through the building at a reasonable cost.

Citing the difficulty of having their legal teams review a one-of-a-kind contract for a proposal, some contractors would only use their own PPA contract language. Some contractors shied away from the City's projects because of the City's standard requirements for certified Local Business and Small Local Business Enterprise participation. These contractors were concerned that because nearly all solar products are manufactured outside Oakland, their ability to offer competitive pricing would be hampered by the estimated cost for building new relationships with unfamiliar certified local subcontractors.

At the end of the meetings with staff, several contractors affirmed their continued interest in City's projects and that they would respond to an RFP that addressed their concerns. Staff affirmed the City's interest in placing solar at as many municipal facilities as possible, including any facilities where solar power can be installed under a PPA at a cost that is less than the City would otherwise pay to PG&E for the same electricity.

Third Solicitation as R-REP Participants

Staff considered the contractors' feedback, and concluded that the market for the City's projects warranted refining the RFP very carefully to address the City's interests while minimizing the amount of time the contractors were expected to invest in preparing their proposals. In October 2015, the City issued a third solicitation to R-REP-qualified contractors. Staff reduced the list to six facilities, with an estimated Solar PV capacity of 357 kW. The list included buildings that are similar to other City sites and noted that the City is very interested in adding many more sites to the contract during negotiations. The Contract Compliance Office analyzed the scope of work and refined the requirements for Certified Local/Small Local Business Enterprise participation accordingly, while remaining within their authority. In response to this RFP, the City received PPA proposals for several hundred kW of Solar PV. At this time, these proposals are being analyzed by staff, after which, negotiations will begin.

Electric Vehicle Charging Activities in OPW

The City has identified the need to build out electric vehicle charging stations to accommodate the projected number of electric vehicles entering the marketplace, estimated at 10 percent of total automobiles in use by 2025. The City's fleet contains more than 1,400 vehicles, and the ability to transition this fleet to plug-in hybrid or fully electric vehicles will depend, in part, on the availability of charging stations at municipal facilities. By 2025, more than 35,000 plug-in vehicles are expected to be in use communitywide. While no specific analysis of the number of charging stations needed throughout municipal facilities has been undertaken, the lowest estimate places 140 plug in vehicles in the municipal fleet by 2025. In addition to serving fleet needs, charging stations at many City facilities would also likely serve private vehicles adding demand. The City continues to pursue grants and other financing mechanisms to install charging stations in support of these needs.

OPW operated four electric vehicles and charging stations from 1997 to 2003. The City will soon have equipment to simultaneously charge nine electric vehicles at its facilities, and it now has three electric vehicles in the municipal fleet. Seven charging ports for public and the City fleet are located in City garages: four beneath the Dalziel Building at 250 Frank H. Ogawa Plaza and three ports in the City Center West Garage at 1250 Martin Luther King Jr. Way. Two additional ports that will serve the City fleet and City employees' vehicles are under construction in a restricted-access area of the surface parking lot at the Municipal Service Center. Concurrently with the City's Solar PV project at the MSC, the City plans to install underground infrastructure to allow for adding electric vehicle charging stations as opportunities arise.

Adding More Electric Vehicle Charging in the Future

OPW has analyzed several City facilities for electric vehicle charging opportunities. In the case of planned parking facility developments, OPW is coordinating with other City departments to ensure that electric vehicle infrastructure design and costs are taken into consideration.

Similarly, OPW and the Bureau of Planning are encouraging private developers to design and build projects that accommodate future EV charging station installations.

Apart from such opportunities, there is no permanent funding source specified for installing the recommended electric vehicle infrastructure and buying charging stations. To acquire funding specifically for electric vehicle charging projects, OPW has reviewed multiple grant programs and, where program requirements are consistent with its analysis, submitted grant applications. All projects to date have been the result of grants that are approved under existing authority from the City Council.

FISCAL IMPACT

No direct fiscal impacts are associated with this informational report.

PUBLIC OUTREACH / INTEREST

The focus on procuring of Solar PV power and installing electric vehicle charging stations originated in the ECAP. The Oakland community was heavily involved in creating the ECAP, and the implementation of the priority measures identified through this planning process is based on input received at that time. No additional public input has been sought on implementing these two items.

COORDINATION

City Staff coordinated these efforts with the Office of City Attorney, the Planning and Building Department Bureau of Planning, the Oakland Public Works Bureaus of: Facilities & Environment, Infrastructure and Operations, and Engineering and Construction, and the Alameda County General Services Agency.

SUSTAINABLE OPPORTUNITIES

Economic:

Developing solar power projects creates green jobs and enhances electricity price stability for the City. Expanding electric vehicle infrastructure at City facilities has the potential to support green job development in the City and beyond. The City will continue to transition its fleet to electric vehicles as part of its overall greenhouse gas reduction strategy, furthering demand for both infrastructure and vehicles.

Environmental:

Creating solar power projects at City facilities will reduce municipal GHG emissions by approximately 31 Metric Tons of CO₂ per 100 kW. Installing electric vehicle charging stations will support driving electric vehicles that reduce greenhouse gas emissions from the City's fleet vehicles, as well as electric vehicles driven to City facilities by City employee's and the public.

The total emissions reduction will vary based on use of the charging stations. No estimates of emissions reductions have been developed.

Social Equity:

Creating solar power projects and building electric vehicle charging stations results in social equity benefits to both the community at large and environmentally disadvantaged communities by creating green jobs, reducing local air pollutants in specific areas, and mitigating the effects of climate change resulting from greenhouse gas emissions.

ACTION REQUESTED OF THE CITY COUNCIL

Staff Recommends That The City Council Accepts This Informational Report On Solar Power And Electric Vehicle Charging Infrastructure At City Facilities.

For questions regarding this report, please contact Scott Wentworth, Energy Engineer, at (510) 238-3984.

Respectfully submitted,



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