



# City of Santa Clara

1500 Warburton Avenue  
Santa Clara, CA 95050  
[santaclaraca.gov](http://santaclaraca.gov)  
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## Agenda Report

19-1128

Agenda Date: 1/15/2019

### REPORT TO COUNCIL

#### SUBJECT

Action on the Bay Area Quality Management District Grant Agreement for Lithium-Ion Battery Energy Storage System Demonstration Project and Related Budget Amendment

#### BACKGROUND

The Bay Area Air Quality Management District's (BAAQMD) Climate Protection Grant Program prioritizes projects that make progress towards achieving BAAQMD's 2030 and 2050 greenhouse gas (GHG) reduction targets. The Grant Program seeks to accelerate the implementation of the BAAQMD's Clean Air Plan and local climate protection efforts and is consistent with the GHG reduction targets adopted by the City of Santa Clara's Climate Action Plan and with the State of California's GHG and renewable energy goals. The BAAQMD Clean Air Plan lays the groundwork for a long-term effort to reduce Bay Area GHG emissions 40 percent below 1990 levels by 2030 and 80 percent below 1990 levels by 2050.

Silicon Valley Power (SVP) applied for grant funding under the BAAQMD 2018 Climate Protection Program on May 11, 2018. The grant is open only to public agencies within BAAQMD's jurisdiction and is aimed to foster innovative strategies that reduce GHGs over the long-term. The Grant Program funds activities in two categories: 1) Reducing GHGs from Existing Buildings and 2) Fostering Innovative Strategies with Long-Term Impacts in Reducing GHG Emissions.

On June 18, 2018, the City was officially awarded a grant for \$300,000 with a two-year timeline to implement a behind-the-meter lithium-ion battery storage pilot project. To fulfill the grant requirements, SVP would partner with a battery equipment manufacturer and a data center to pilot a demonstration project.

On November 29, 2018, the Council adopted Silicon Valley Power's 2018 Integrated Resource Plan (IRP). The pilot project supports the goals of the IRP to consider the integration of technologically viable and cost-effective energy storage technologies, explores battery storage technology as part of SVP's procurement planning process, and minimizes localized air pollutants and GHGs.

#### DISCUSSION

The proposed Lithium-Ion Battery Energy Storage System Demonstration Project (BESS Project) will demonstrate the use-case for lithium-ion batteries as longer-duration uninterruptible power supply for data centers that are instantaneous and reliable, delaying the use of diesel generators as backup power. The BESS Project will demonstrate the economic viability and flexibility of a 1 MW/4 MWh battery energy storage system that can be simultaneously dispatched at 2 MW capacity to support critical loads during a power quality event or outage.

Such a system stores energy through the use of a battery technology and has the capability to

increase the reliability and dispatchability of energy supply at a later time, and is inclusive primarily of a battery, inverter, enclosure/rack, controller, housing, and battery management system.

The BESS Project combines multiple use storage applications to reduce the operational time and need of diesel generation, optimize GHG reductions through the increased use of renewable energy on the grid to charge the battery, and to reduce the need for natural gas generation dispatch during the evening peak demand hours, through the cycling of a fully dispatchable battery. The project aims to foster innovation, while reducing GHGs in vulnerable communities, and will develop a pilot program to be used for new data center builds in the Bay Area, focusing on the City of Santa Clara as a leader in innovative sustainable solutions.

SVP will evaluate data center partners based on their aligned goals with the City of Santa Clara's Climate Action Plan and BAAQMD's renewable energy and climate goals, a high potential for GHG emissions reduction, cost-effective, and the ability and interest to potentially scale-up the project in future years.

The Grant funding will be used towards the total installed costs (including capital costs) of the BESS Project with a total estimated cost of approximately \$2 million. The equipment will be procured in FY 2019/2020. The future procurement costs include the capital expenditure and installation costs, which will be funded by SVP and the data center.

SVP will return to Council in spring 2019 to request authorization to finance the BESS equipment. The total authorization amount is to be determined, and over the 15-year lifetime of the BESS Project, the total installed costs will be recovered through the BAAQMD grant and multiple value streams from the project, of which include: avoided transmission costs, generation capacity (the BESS Project contributes to system resource adequacy by discharging during peak demand hours and scarcity events), and revenue generated from energy price arbitrage (the battery can be charged during low -or negative- priced hours and discharged during higher priced hours to avoid dispatching generators with high fuel and variable operating and maintenance costs), and contribution from the data center.

Staff recommends executing the BAAQMD Grant Agreement Grant No. 2018.245 for \$300,000 and approving the related budget amendment to appropriate the grant funding. The BAAQMD grant requires that SVP and its partners (a battery manufacturer and a data center) complete the pilot project within two years of the final execution of the Agreement. A copy of the Grant Agreement with the BAAQMD is attached to this report.

## **ENVIRONMENTAL REVIEW**

The action being considered is part of a feasibility study designed to reduce environmental impacts from diesel back-up generators by substituting batteries as a back-up power source to delay and/or avoid the activation of diesel back-up generators. The project is therefore statutorily exempt under CEQA Guidelines section 15262, Feasibility and Planning studies.

## **FISCAL IMPACT**

The City will receive reimbursement of \$300,000 from BAAQMD and staff proposes to accept and appropriate in Grant Funding CIP 2398 Clean Energy and Carbon Reduction. The Grant will be used to partially support the cost of the demonstration project.

Grant funding will be transferred in quarterly tranches from BAAQMD to the City in the amount of \$37,500 in Fiscal Year 2018/19, \$150,000 in Fiscal Year 2019/20, and \$112,500 in Fiscal Year 2020/21. The budget amendment below reflects appropriation actions for FY 2018/19. Actions in subsequent years will be included as part of future budgets. The total estimated cost of the project is approximately \$2 million. The funding for installation and equipment will be procured in FY 2019/2020 and will be funded by SVP and the data center. The exact share of the City contribution will be determined at a future date.

### Budget Amendment FY 2018/19

|   | Current   | Increase/<br>(Decrease) | Revised   |
|---|-----------|-------------------------|-----------|
| <b>Fund 591 - Electric Utility Revenues</b>                         |           |                         |           |
| Clean Energy and Carbon Reduction -<br>Grant Funding (CIP 591-2398) | \$199,280 | \$37,500                | \$236,780 |
| <b>Expenditures</b>   |           |                         |           |
| Clean Energy and Carbon Reduction -<br>Construction (CIP 591-2398)  | \$199,280 | \$18,750                | \$218,030 |
| Clean Energy and Carbon Reduction -<br>Engineering (CIP 591-2398)   | \$0       | \$18,750                | \$18,750  |

### **COORDINATION**

This report has been coordinated with the Finance Department and City Attorney's Office.

### **PUBLIC CONTACT**

Public contact was made by posting the Council agenda on the City's official-notice bulletin board outside City Hall Council Chambers. A complete agenda packet is available on the City's website and in the City Clerk's Office at least 72 hours prior to a Regular Meeting and 24 hours prior to a Special Meeting. A hard copy of any agenda report may be requested by contacting the City Clerk's Office at (408) 615-2220, email [clerk@santaclaraca.gov](mailto:clerk@santaclaraca.gov) or at the public information desk at any City of Santa Clara public library.

### **RECOMMENDATION**

1. Approve the Bay Area Air Quality Management District 2018 Grant Agreement No. 2018.245, accepting the grant award of \$300,000; and
2. Approve the Related Budget Amendment (Five Affirmative Council Votes Required for Available Revenue Not Included in the Budget).

Reviewed by: Manuel Pineda, Interim Chief Electric Utility Officer

Approved by: Deanna J. Santana, City Manager

### **ATTACHMENTS**

1. Bay Area Air Quality Management District Grant Agreement Grant No. 2018.245