



**REGULAR MEETING of the Board of Directors of the
Peninsula Clean Energy Authority (PCEA)
Thursday, March 28, 2019**

Peninsula Clean Energy, 2075 Woodside Road,
Redwood City, CA 94061
6:30 p.m.

Supplemental Agenda Packet items. Please find attached:

- Item No. 6.0 Multi-Unit Dwelling (MUD) Low Power Electric Vehicle Charging Pilot Memo
- Item No. 6.1 Multi-Unit Dwelling (MUD) Low Power Electric Vehicle Charging Pilot Resolution
- Item No. 6.2 Multi-Unit Dwelling (MUD) Low Power Electric Vehicle Charging Pilot Statement of Work



**PENINSULA CLEAN ENERGY
JPA Board Correspondence**

DATE: Mar. 18, 2018
BOARD MEETING DATE: Mar. 28, 2018
SPECIAL NOTICE/HEARING: None
VOTE REQUIRED: Majority Vote

TO: Honorable Peninsula Clean Energy Authority Board of Directors

FROM: Jan Pepper, Chief Executive Officer, Peninsula Clean Energy
Rafael Reyes, Director of Energy Programs

SUBJECT: Contract for MUD Low-Power EV Charging Pilot

RECOMMENDATION

Delegate authority to the Chief Executive Officer to execute an agreement with Energy Solutions to conduct the Multi-Unit Dwelling (MUD) Low Power Electric Vehicle Charging Pilot in an amount not to exceed \$400,000 over three years.

BACKGROUND

Peninsula Clean Energy's mission is to reduce greenhouse gas (GHG) emissions in San Mateo County. The three main contributors to GHG emissions are electricity use, transportation, and natural gas use in buildings. One of the strategic goals of PCE is to further reduce GHG emissions by investing in programs such as electric vehicles (EVs) which reduce the reliance on GHG producing gasoline vehicles. This memo describes an EV Pilot Project aimed at addressing a specific challenge associated with infrastructure deployment.

In June 2018 the Board approved \$1 million for a MUD and Curbside Pilot Project. One half of the project, which is addressed by this contract, focuses on identifying technology to facilitate low-power, 110-volt charging locations (also known as "Level 1") for use primarily in MUDs, which often have limited electrical capacity. The other half of the Pilot project, addressing curbside charging, will be brought to the board in the near future.

Charging access in MUDs remains a major barrier to EV use: roughly half the county population lives in some form of MUD. Given that nearly 80% of MUDs in the County are more than 50 years old, many have very limited excess power for EV charging stations. Similar challenges can also be found in workplace sites. Addressing this barrier is critical for both low-income residents and nearly half of county residents generally.

This project is separate but complementary to the EV Infrastructure Incentive Program approved by the Board in December. The EV Infrastructure Incentive Program is the large-scale initiative to advance EV infrastructure broadly across the County. This Pilot Project is intended to identify one or more technology solutions which meet the following objectives: (1) increase access to EV charging in MUD; (2) keep cost low; and (3) provide the administrative functions property owners frequently need such as access control and payment management.

DISCUSSION

To address MUDs, most EV charging technologies have historically focused on 220/240 volt solutions, typically called “Level 2”. These options provide higher charging rates but consume more power, limiting the number of vehicles that can be served in a capacity-constrained scenario. The average mileage for San Mateo County is 25-30 miles daily. Given this daily mileage, most driving requirements can therefore be easily served by Level 1 low power 110/120 volt charging which can provide 35 to 40 miles over 7 to 8 hours. Many EV drivers already rely on Level 1 charging for their day to day needs, in some cases complementing Level 1 charging with occasional visits to high speed “Fast Charge” stations (sometimes referred to as Level 3 which can provide 80+ miles in half an hour).

In some scenarios, typically smaller properties managed by owners with few units, installing a standard outlet is satisfactory for providing Level 1 charging. However, a simple outlet does not address the administrative requirements of larger property owners, both MUD and workplaces. Larger property owners (owning many units) generally require access control to allow only authorized use and billing management. In addition, a simple outlet does not provide for tracking utilization and potential load management. While some charging equipment solutions exist with such features, they are relatively expensive – hundreds of dollars per unit. The objective of this project is to identify, pilot, and assess Level 1 charging solutions with administration features but at substantially lower cost.

PCE developed a detailed scope of work and solicited proposals for the project with an RFP released January 4, 2019. Proposals were due February 14, 2019. PCE received eight proposals and held interviews with the two strongest proposers. After the interviews, PCE selected Energy Solutions to provide these services based on their team, which included deep local relationships with apartment building owners and managers, experience with EV charging technologies and installations and their experience with emerging technologies.

The PCE funds proposed here would be used to:

1. Solicit input from property owners and managers, EV drivers and other EV stakeholders on needs for low power EV charging solutions.
2. Develop technology specifications and solicit technology providers to provide the required solution.
3. Work with apartment owners to identify pilot locations and deploy select pilot technologies.
4. Assess the effectiveness of the solution(s) deployed.

The Energy Solutions project partners include EV Charging Pros for apartment engagement and Atlas Pellizzari (Atlas) for installations. EV Charging Pros does extensive work with apartment properties in San Mateo County, was previously contracted by PCE to deliver apartment technical assistance for EV charging and create a detailed characterization study which identified the need for an improved low-power charging solution. Atlas is a highly reputable electrical contractor with a C-10 license whose staff are IBEW members, and their staff lead the local Electric Vehicle Infrastructure Training Program (EVITP) which provides certifications for EV charger installations.

This is a 3-year Agreement with Energy Solutions not to exceed \$400,000 including installations. The final contract terms will be finalized to include PCE ownership of work products (such as the specifications to be developed by the consultant); there may be minor refinements to the scope of work.

The presentation to the Board on this agenda item will provide additional detail regarding the different levels of charging (Level 1, Level 2, and DC fast charging); home charging needs; the need for Level 1 charging; and comparisons to other electrical uses in MUDs.

FISCAL IMPACT:

Not to exceed \$400,000 over 3 years.

ATTACHMENTS:

- Resolution
- Scope of Work from RFP

RESOLUTION NO. _____

**PENINSULA CLEAN ENERGY AUTHORITY, COUNTY OF SAN MATEO, STATE OF
CALIFORNIA**

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**RESOLUTION DELEGATING AUTHORITY TO THE CHIEF EXECUTIVE OFFICER
TO EXECUTE AN AGREEMENT WITH ENERGY SOLUTIONS TO CONDUCT THE
MULTI-UNIT DWELLING LOW POWER ELECTRIC VEHICLE CHARGING PILOT IN
AN AMOUNT NOT TO EXCEED \$400,000 OVER THREE YEARS.**

RESOLVED, by the Peninsula Clean Energy Authority of the County of San Mateo, State of California, that

WHEREAS, PCE was formed on February 29, 2016; and

WHEREAS, supporting electric vehicle charging in multi-unit dwellings to reduce greenhouse gasses is one of the strategic goals of PCE; and

WHEREAS, PCE has determined that many multi-unit dwellings have limited electrical capacity; and

WHEREAS, PCE issued a request for proposals on January 4, 2019, seeking services supporting a multi-unit dwelling (MUD) low power EV Charging Pilot Project and received eight proposals; and

WHEREAS, Energy Solutions was selected for their experience with apartment properties, EV charging solutions, and emerging technology; and

WHEREAS, PCE staff and Energy Solutions have negotiated and agreed on the core terms of an agreement to be effective from approximately April 2019 through March 2022 in an amount not to exceed \$400,000; and

WHEREAS, the Board wishes to delegate to the Chief Executive Officer authority to finalize and execute the aforementioned Agreement.

NOW, THEREFORE, IT IS HEREBY DETERMINED AND ORDERED that the Board delegates authority to the Chief Executive Officer to finalize and execute an Agreement with Energy Solutions in an amount not to exceed \$400,00 over three years and in a form approved by the General Counsel.

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2019 Low Power Electric Vehicle Charging Pilot

Request for Proposals – Project Description

1 Overview

Peninsula Clean Energy's (PCE) mission is to reduce greenhouse gas (GHG) emissions in San Mateo County. Emissions from transportation and building natural gas use comprise the largest two sources of GHGs within the county. This project has the objective of reducing transportation emissions by piloting new solutions/technologies focused on low-power charging for residents of multi-unit dwellings (MUDs).

Residential charging is highly important to electric vehicle (EV) drivers. Yet, residential charging is currently readily available primarily to those who reside in single-family homes. Approximately half the population of San Mateo County lives in MUDs or other residential scenarios with limited access to charging. The majority of these MUDs were never designed to include charging capability. As such, retroactively installing and operating EV charging equipment in MUDs is generally difficult for multiple reasons including installation and operational costs (perceived and real), landlord/owner concerns, billing, lack of business models, etc. In addition, research indicates that the majority of these MUDs, especially apartments, are older and have highly constrained power availability. While service upgrades are possible, such upgrades can greatly increase the cost of installing EV charging infrastructure.

To address MUDs, most EV charging technologies have historically focused on 220/240 volt solutions, typically called "Level 2". These options provide higher charging rates but consume more power, limiting the number of vehicles that can be served in a capacity-constrained scenario. The average mileage for San Mateo County is 25-30 miles daily¹. Given this daily mileage, most driving requirements can therefore be easily served by low power 110/120 volt charging, typically called "Level 1" charging. The objective of this project is to identify, pilot, and assess Level 1 charging solutions for multi-unit dwellings and similar residential scenarios.

2 Term and Budget Range

The contract will be for up to 3 years and the maximum budget will not exceed \$400,000. This budget does not include acquiring or operating the solution/technology. Installation shall be billed on an actual cost basis as invoiced by the construction contractors. Proposals should include installation cost estimates recognizing that the installation costs will be finalized during the course of the project based on site and technology specifics.

3 Contractor Responsibilities

¹ See <http://www.vitalsigns.mtc.ca.gov/daily-miles-traveled>

3.1 Project Administration

Contractor will execute required project administration. Contractor activities will include:

1. Developing a detailed project plan,
2. Providing monthly progress reports,
3. Participating in regular meetings and calls with PCE as mutually determined,
4. Providing budget reporting,
5. Providing invoices for all major supplies and equipment purchased,
6. Providing subcontracts for all subcontractors, and
7. Documenting and providing any additional information as determined by PCE.

3.2 Business Needs Assessment & Requirements

Contractor will identify and engage stakeholders to execute a needs assessment for low-power charging solutions. Contractor activities will include:

1. Working with PCE to define the universe of relevant stakeholders
2. Determining an outreach and engagement/ data collection strategy to gather information,
3. Executing the outreach and engagement/ data collection strategy in collaboration with PCE as mutually determined,
4. Prioritizing features by stakeholder in consultation with PCE, and
5. Documenting the features into formal requirements.

These business requirements to be defined will include:

1. Addressing vehicle charging requirements and maximize the number of vehicles served under power constrained conditions,
2. EV driver needs,
3. EVSE capital and operating costs,
4. Addressing the needs of property owners to manage the charging solution such as access control, payment management, and operational support,
5. Potentially including grid serving features as determined by PCE, and
6. Replicability/ scalability.

3.3 Solution/Technology Research

Contractor will research promising solutions either in the market or that can be developed by private parties which meet the requirements identified in 3.2. The research and a summary of conclusions will be delivered in document form.

The research should identify:

1. Channels to utilize for the competitive procurement process (3.4),
2. The “market gap” between available technologies and the desired requirements,
3. Pros and cons of different solution approaches,
4. Feasibility of the gap being closed by suppliers,

5. The conditions under which suppliers may be able to provide the desired features, and
6. Least expensive (capital + operating) solution
7. Any additional conditions, services and support that prospective solutions would need to be successful in the market.

3.4 Solution/Technology Acquisition

With Contractor, PCE proposes to pilot one or more solutions. Contractor will work with PCE to acquire technologies to pilot. PCE may execute RFPs and will purchase the technologies sufficient units for use in the pilot(s). Contractor activities will include:

1. Defining the final set of requirements to utilize for the pilots,
2. Develop a formal Request for Proposals utilizing those requirements,
3. Circulate the RFP to relevant channels, and
4. Assist in scoring the proposals.

3.5 Pilot Site Recruitment

Contractor will recruit 3-5 suitable sites per pilot. Contractor activities will include:

1. Collaboratively defining the criteria for pilot site candidates,
2. Developing with PCE the site agreements to be executed between Contractor and the site owner for participation,
3. Recommending for participation specific sites meeting the criteria,
4. Recruiting the property owners of mutually agreed upon sites, and
5. Executing site agreements with the property owners.

3.6 Installation Management & Site Support

Contractor will manage or assist in the coordination of the installation of the technologies and their ongoing operation. It is expected that the pilots will operate for 18 months. Contractor activities will include:

1. Working with property owners on site readiness including developing site policies, training and other needs for successful operation of the technologies,
2. Working with the property owners to execute communications to prospective users of the technologies,
3. Selecting appropriate construction contractors complying with the PCE Sustainable Workforce policy,
4. Directly managing the contractors throughout the installation process or assisting the property owner in managing the installation if the property owner wishes to manage the installation directly,
5. Validating the successful installation and completing any required technology configuration
6. Working with the property owners, recruit EV drivers to utilize the technology to charge vehicles, and

7. Once in operational mode, collect feedback on the technology performance from the property owners and residents plus respond as necessary.

3.7 Assessment and Disposition

Contractor will assess the technology and address any final disposition required. Contractor activities will include:

1. Providing an assessment of the technical, financial and usability performance of the technology,
2. Work with the technology vendor and property owner to correct issues where possible, and
3. If deemed necessary by PCE and the property owner due to technology failure, remove the technology from site(s).

3.8 Final Report and Recommendations

Contractor will develop a final report. The final report will include:

1. Executive summary,
2. Itemized description of outcomes for each project objective,
3. Itemized description of any additional accomplishments,
4. A matrix of technology effectiveness by pilot and readiness for scaled deployment including installation, usability, charging effectiveness, administrability, cost (installation & operation) and other targeted features,
5. Building load impacts,
6. Evaluated conclusions drawn from the project including lessons learned and recommendations for future work,
7. Financial summary comparing expenditures to the project budget, and
8. Supplemental documentation which must include, as appropriate, technical designs, permits, equipment specifications, photographs of installed equipment and participants, and materials developed for partner use.