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Executive Summary

Stanton Energy Reliability Center, LLC (SERC, LLC) proposes to construct, own, and operate a hybrid electrical generating and storage facility in Orange County, California (project). The Stanton Energy Reliability Center (SERC) will consist of two General Electric (GE) LM6000-based EGTs. EGT refers to the LM6000 PC Hybrid EGT jointly developed by General Electric International, Inc. (GE) and Wellhead Power Solutions. The EGT combines a combustion gas turbine with an integrated battery storage component operated by a proprietary software system. Each EGT will consist of a GE LM6000 PC natural gas-fired, simple-cycle combustion turbine, a clutch to provide operational flexibility as a synchronous condenser, and an integrated 10-megawatt (MW) GE Battery Energy Storage System. In total, SERC will provide 98 MW (nominal) of EGT capacity. The EGT provides a broad array of unique reliability benefits that neither gas turbines nor batteries can provide on their own.

Project Objectives

The SERC's primary goal is, as its name implies, to be a state-of-the-art *energy reliability* resource. SERC has been designed to deliver superior reliability services with a minimal carbon footprint and a low emissions profile. The project will be one of the first commercial applications of the EGT technology. Using this technology, SERC is able to combine dispatchable, operationally flexible, and efficient energy generation with state-of-the-art energy storage technology to meet the need for new local capacity and reliability services specifically in the West Los Angeles (LA) Basin local reliability area of Southern California Edison's (SCE's) service territory.

Project Location

SERC will be located in the City of Stanton, Orange County, at 10711 Dale Avenue. The site is located in an area that is zoned Industrial General (City of Stanton IG zoning district). Land uses surrounding the site include the City of Stanton's industrial area to the north and south, public/quasi-public utility areas to the east consisting of the SCE Barre Peaker power plant and Barre Substation, and high- and medium-density residential uses to the southeast and northwest.

Project Elements

The main project elements, including linear facilities and construction laydown areas, are as follows:

- Two GE Energy LM6000 PC combustion turbine generators (CTGs) (or equivalent) equipped with selective catalytic reduction air emissions control equipment and associated support equipment for nitrogen oxides (NOx) and carbon monoxide (CO) control
- Two sets of lithium-ion batteries housed in purpose-built battery enclosures, each with a nominal capacity of 10 MW (total 20 MW) and 5 megawatt hours of storage (total 10 megawatt hours)
- Interconnection to SCE's Barre Substation via a 0.35-mile-long underground generator tie-line that runs from the SERC site east to the substation
- Natural gas pipeline connection via either a new 12- or 16-inch-diameter pipe that will extend either 2.75 miles north along Dale Avenue to Southern California Gas Company's (SoCalGas's) Line 1014 in La Palma Avenue or 1.78 miles south along Dale Avenue to SoCalGas's Line 1244 in Lampson Avenue
- Process and potable water supply from Golden State Water Company via connections on the east to Dale Avenue and on the west to Pacific Street

- Industrial wastewater will be discharged to the City of Stanton sanitary sewer line in Pacific Street to the west of the project or Dale Avenue to the southeast of the project
- Temporary construction facilities will include a 2.89-acre worker parking area at the Bethel Romanian Pentecostal Church, 350 feet south of the SERC site along Dale Avenue¹. The construction laydown area for the gas-fired power plant will be on the western part of the site, site of the battery storage system. The battery storage system is to be constructed after construction of the gas turbine part of the EGT is complete.

Project Benefits

SERC will provide the following key environmental and economic benefits:

- **California Public Utilities Commission (CPUC)-approved Resource Adequacy Purchase Agreements (RAPAs):** SERC has two RAPAs with SCE that were approved by CPUC in recognition of the strategic site location to provide local reliability support to the SCE West LA Basin subarea. The project has thus been recognized by both SCE and CPUC as a beneficial and significant addition for grid services in the SCE service area.
- **Uses the innovative EGT technology jointly developed by Wellhead Power Solutions and GE:** The EGT technology uniquely provides the following:
 - Greenhouse gas-free operating reserve
 - Flexible capacity without start time
 - Peaking energy for local contingencies
 - Voltage support and primary frequency response without fuel burn
 - Superior transient response attributable to co-location of gas turbines and battery
 - Gas turbine supervisory control system management of battery state-of-charge
- **Local Reliability Support in the SCE West LA Basin Subarea:** With the shutdown of San Onofre Nuclear Generating Station and as the retirement of aging coastal plants that use once-through cooling, SERC will provide much-needed generation for local reliability in SCE's West LA Basin Subarea. This subarea has been specifically identified by the California Independent System Operator as needing local reliability generation and ancillary grid services, and this project was selected by SCE out of over 100 proposals received as part of the SCE's 2013 Local Capacity Requirements Request for Offers sanctioned by CPUC to address this specific need.
- **Minimized Land Use Impacts:** SERC is sited in an area zoned Industrial that is partly paved and used for vehicle storage and partly consists of disturbed area that is currently vacant. The site is zoned IG. There are no schools, parks, recreational areas, or other sensitive land uses immediately adjacent to the site. The project is consistent with the applicable local land uses and land use plans.
- **Key Project for Integrating Renewables:** SERC will provide rapid-response delivery of energy and synchronous condenser voltage support services that are essential to provide reliability support and stability to the grid and integrate intermittent renewable energy sources into the electrical grid.
- **Numerous Construction Jobs:** SERC will provide for a peak of approximately 60 construction jobs over a 12-month construction and commissioning period.
- **Substantial Property Tax Revenue to City of Stanton, Orange County, and Local Schools:** SERC will generate approximately \$1.665 million in property tax per year.
- **Local Economic Benefits:** SERC will not significantly impact local housing, educational, or emergency response resources. In addition to the direct employment benefit, SERC will require and use the

¹ SERC, LLC is currently in negotiations with church representatives for use of the parking lot.

services of local or regional firms for major maintenance and overhauls, plant supplies, and other support services throughout the life of SERC.

- **Sited Within a Supportive Community:** SERC is within the City of Stanton. SERC has been working collaboratively with the City of Stanton for over 2 years, and the parties have executed a Cooperation Agreement.

Project Ownership

SERC, LLC will construct, own, and operate SERC. SERC, LLC is a joint venture of W Power, LLC and Wellhead Energy, LLC. W Power, LLC is the majority partner. W Power is a 100 percent female-owned Diverse Business Enterprise (DBE) possessing state of California DBE certification as a Women Business Enterprise under the CPUC certification process. W Power also possesses federal DBE certification as a Women-Owned Small Business via the United States Small Business Administration certification process. Wellhead Energy, LLC is an affiliate of Wellhead Electric Company Inc. (Wellhead), which is a developer, owner, and operator of small and medium-sized power plants. Privately held since its founding in 1982, Wellhead is the only remaining California-based independent power producer. Wellhead has developed the EGT and has a patent pending on the technology.

Project Schedule

SERC, LLC is filing this Application for Certification (AFC) under the California Energy Commission's (CEC's) 12-month licensing process. Construction of SERC is expected to begin no later than November 2018. Pre-operational testing of the power plant is expected to begin in September 2019, and full-scale commercial operation is expected to begin by December 2019.

Environmental Considerations

Pursuant to the requirements set forth in existing environmental laws and the CEC's regulations, 16 areas of possible environmental impact from SERC were investigated. Detailed descriptions and analyses of these areas are presented in Sections 5.1 through 5.16 of the AFC. As discussed in detail in this AFC, with the implementation of the proposed mitigation measures and the anticipated Conditions of Certification, there will be no significant unmitigated environmental impacts associated with the construction and operation of SERC. This Executive Summary highlights seven subject areas that have historically been of interest in CEC proceedings: air quality, biological resources, cultural resources, land use, noise, visual resources, and water resources.

Air Quality

An assessment of the potential impact on air quality was conducted based on the SERC emission estimates and air dispersion modeling. As discussed in Section 5.1, the predicted impacts are expected to be less than the California Ambient Air Quality Standards for the attainment pollutants (CO, NO_x, and sulfur dioxide). The SERC site is located in an area designated by the U.S. Environmental Protection Agency as non-attainment for ozone and particulate matter with a diameter less than 2.5 microns (PM_{2.5}) and California Air Resources Board as non-attainment for ozone and particulate matter with a diameter less than 10 microns (PM₁₀) and PM_{2.5}. SERC's potential air quality impacts will be mitigated by the installation and operation of Best Available Control Technology for the combustion turbines. As a result, SERC will have no significant adverse impact on air quality or public health. See Section 5.1 for a detailed analysis of air quality and Section 5.9 for public health.

Biological Resources

The SERC site is located partly on a paved brownfield site and partly on undeveloped land that is covered in ruderal vegetation. The generator tie-line and natural gas pipeline are routed in urban areas and would not result in the modification of wildlife or other sensitive habitat.

SERC will not affect special-status species or their habitats, and federal or state permits related to biological resources will not be required. Standard avoidance and mitigation measures will be developed in the Biological Resources Mitigation Implementation Monitoring Plan that will be submitted to CEC. SERC will have no significant impacts on biological resources. Section 5.2 provides a detailed discussion of potential impacts on biological resources from the construction and operation of SERC.

Cultural Resources

Archaeological surveys have not located archaeological properties within SERC's area of potential effects, and consultations with Native Americans have not identified traditional cultural properties or other concerns. A historic architectural literature search and field survey indicates that several buildings older than 50 years are located in the area immediately surrounding SERC, but that these buildings do not meet the criteria for listing in the National Register of Historic Places or California Register of Historical Resources. Section 5.3 provides a detailed discussion of potential impacts on cultural resources from the construction and operation of SERC.

Land Use

SERC is consistent with all applicable federal, state, and local plans and policies, and as such, there are no significant land use impacts associated with the implementation of the project. SERC is subject to applicable policies in the City of Stanton General Plan, and has a General Plan Land Use designation of Industrial. SERC is on land that is zoned IG. Allowable uses in this zone include utility infrastructure and utility service facilities, with a conditional use permit land entitlement and Planning Director or Planning Board approval. The project would require a height variance for the exhaust stacks, aesthetic and noise enclosures, and minor equipment, and the City of Stanton has indicated support of the proposed variance. SERC will not conflict with air navigation operations associated with Los Alamitos Army Airfield. Section 5.6 contains a detailed discussion of SERC's land use.

Noise

There will be no significant adverse noise impacts from the construction or operation of SERC. With noise control measures incorporated in the design, noise from SERC will not exceed 49 decibels (A-weighted scale) (dBA) in the vicinity of the nearest receptor and 43 dBA at the second nearest receptor. These levels will comply with the City of Stanton's day, evening, and nighttime guidelines. In addition, as a simple-cycle peaking power plant, SERC will be likely to operate mostly during times of very high electrical load, when baseload plants are not operating, when balancing renewables is necessary, or during emergency conditions. The most common times of operation will likely be afternoons during hot weather episodes. Nighttime operation of SERC, while it may occur, will be relatively rare, and full-load nighttime operation will be even less frequent. Section 5.7 contains a detailed discussion of the noise impact assessment of SERC.

Visual Resources

SERC will not result in any adverse visual impacts, nor will it degrade the existing visual character or quality of the site and its surroundings. SERC is located in Stanton's industrial corridor, with some surrounding residential and commercial land uses. The facility will be visible only from a few nearby vantage points because of surrounding structures. Furthermore, SERC, LLC has worked with the City of Stanton to develop architectural treatment and landscaping plans that enhance the aesthetics of the SERC and allow it to blend in with the surrounding buildings and structures. Therefore, even where it can be seen, SERC will not substantially degrade the visual quality of the surroundings. SERC is not located in a scenic or protected viewshed, and there are no state scenic highways in its vicinity. Section 5.13 contains a detailed discussion of the visual resources assessment.

Water Resources

There will be no significant adverse impacts on water resources from the construction or operation of SERC. As an EGT operating in simple-cycle mode, the project will use no water to condense steam for power generation and therefore will have no cooling tower. Equipment (generators, lube oil, gas compressors, and HVAC) will be air cooled. A Water Supply Assessment has been requested from water service provider Golden State Water Company. Section 5.15 contains a detailed analysis of water resources.