Clean Coalition
Making Clean Local Energy Accessible Now

August 29, 2014

Hon. Kathleen H. Burgess
Secretary to the Commission
NYS Public Service Commission
Three Empire State Plaza
Albany, New York 12223
Secretary@dps.ny.gov

Re: Matter 14-01299 – PSEG Long Island's Utility 2.0 Long Range Plan – Community Microgrid to Demonstrate Enhanced Resilience in South Fork

Dear Secretary Burgess:

In response to the call for comments on the Utility 2.0 Long Range Plan of PSEG Long Island, the Clean Coalition offers the following recommendations for designing and implementing a Community Microgrid for the South Fork to demonstrate the simultaneous deployment of significant local renewables and enhanced grid resilience. The Clean Coalition provides the following recommendations for developing and implementing a cost-effective and scalable Community Microgrid project in the South Fork: (a) selecting a single substation for the project, (b) considering substations in the South Fork with at least several thousand customers, (c) islanding only a few truly critical loads rather than the entire substation grid area, and (d) achieving the fully deployed Community Microgrid project by yearend-2016 before generous Federal tax benefits are set to expire.

I. Introduction

The Clean Coalition is a nonprofit organization whose mission is to accelerate the transition to renewable energy and a modern grid through technical, policy, and project development expertise. The Clean Coalition drives policy innovation to remove barriers to procurement, interconnection, and realizing the full potential of integrated distributed energy resources, such as distributed generation, advanced inverters, demand response, and energy storage. The Clean Coalition also works with utilities to develop Community Microgrid projects that demonstrate that local renewables can cost-effectively provide at least 25% of the total electric energy consumed within the distribution grid, while maintaining or improving grid reliability. The Clean Coalition actively supported the establishment of the 150 MW of Feed-In Tariff programs for Long Island, is participating in the New York Reforming the Energy Vision (NY REV) proceeding, and is active in numerous energy-related proceedings throughout the United States.

In collaboration with Pacific Gas & Electric and in support of the city of San Francisco's goal to achieve a 100% renewable electricity supply, the Clean Coalition is spearheading a groundbreaking project in the Bayview and Hunters Point areas of San Francisco. The Hunters Point Project, part of the Clean Coalition's Community Microgrids Initiative, will prove that local renewables can fulfill at least 25% of total electric energy consumption for the 20,000 customers served by the Hunters Point substation while maintaining or improving power quality, reliability, and resilience. Policymakers and utility executives need to see real-world solutions in action to gain confidence in accelerating the transition to local renewables. The Hunters Point Project, which is named after the substation serving the Bayview and Hunters Point areas of San Francisco, is designed to provide a world-class example that facilitates San Francisco, and communities around the globe, to reap the benefits from significant levels of local renewables – including economic, environmental, and resilience benefits.

Phase 1 of the Hunters Point Project, to be completed by yearend-2014, will result in a replicable model that any community can use to evaluate Community Microgrid opportunities. Ultimately, the modeling platform will expedite the creation of Community Microgrids by efficiently simulating the ability of local renewables to balance vital grid services (power, voltage, and frequency) locally and cost-effectively. Phase 2 of the Project, which is anticipated to be substantially completed by yearend-2015, will result in the actual deployment of the Hunters Point Community Microgrid. Additional information about the Project is attached.

II. Recommendations for Designing and Implementing a Community Microgrid for the South Fork to Demonstrate Enhanced Resilience

In its Utility 2.0 Long Range Plan (at 3-34), PSEG Long Island notes the potential for demonstration of enhanced resilience in the South Fork that can be enabled incorporating large-scale microgrid concepts in the South Fork. The Clean Coalition provides the following recommendations for developing and implementing a cost-effective and scalable Community Microgrid project in the South Fork.

a. <u>Select a single substation</u>

The Clean Coalition recommends selecting a single substation in the South Fork for the Community Microgrid project. Although the initial requirements of the New York Prize competition sought multiple substations, we recommend that the New York Prize support projects that are far more cost-effective while demonstrating microgrid benefits at the easily replicable single substation level by focusing on one substation. A single substation is the best common dominator to demonstrate modern grid functionality in a cost-effective and replicable fashion. Once new functionality is perfected throughout a

single substation, the functionality can be stamped across entire distribution grids, including across substations in NY and beyond. Plus, taking the single substation approach reduces unnecessary complexity, risk, and cost of the project, making it possible to achieve 80% of the benefits with 20% of the cost of a fully-islandable, multiple substation project. The application of the 80/20 rule is generally prudent with respect to demonstration projects that are complex, costly, and would otherwise take many additional years.

b. Consider substations in South Fork with several thousand customers

The Clean Coalition also supports the selection of a substation in the South Fork since this region faces significant transmission constraints, and therefore distributed energy resources in the South Fork would have higher value to the grid and ratepayers. Rather than using the New York Prize competition criteria of 30,000 or more customers to select a substation, the Clean Coalition recommends selecting a substation that is largely representative of other substations in PSEG Long Island's territory so that the project can be more easily replicated across the region. The Clean Coalition believes that PSEG Long Island's proposed selection of Montauk substation in its Utility 2.0 Long Range Plan is highly viable.

c. Island essential services rather than an entire substation

Although the New York Prize competition called for projects that can fully island from the grid, the Clean Coalition recommends that PSEG Long Island develop a Community Microgrid that increases resilience for the entire substation but only enables islanding of critical services, such as hospitals, water treatment facilities, and emergency response facilities. Based on the Clean Coalition's experience with estimating costs for Community Microgrid Initiative projects, islanding an entire substation would not be cost-effective – the additional costs would outweigh the additional benefits. Most of the resilience benefits of islanding can be achieved at a fraction of the cost, and in a fraction of the time, by islanding only the most critical services at the start. On the other hand, islanding only critical services would enable deployment of a far more cost-effective and timely demonstration that can be relatively easily enhanced and replicated.

New York needs cost-effective resilience solutions that can be scaled to provide benefits for citizens across the state. In addition to islanding essential services, a Community Microgrid can cost-effectively increase resilience for all customers within a substation by reducing the community's reliance on vulnerable transmission lines[1] and using

[1] For more information, see the Hunters Point Project Benefits Analysis, available at http://www.clean-coalition.org/site/wp-content/uploads/2012/10/HPP-Benefits-Analysis-Summary-21_gt-26-Mar-2014.pdf

distributed advanced inverters to provide local voltage control.[2] The opportunity to demonstrate significant penetration levels of renewables also ensures that New York can maximize the role of renewables in its reformed energy planning.

d. Accelerate the project schedule

The Utility 2.0 Long Range Plan proposes a microgrid target completion date of 2019. The Clean Coalition recommends accelerating the schedule for the project so that deployment is completed by yearend 2016. To procure the most cost-effective distributed solar, PSEG Long Island should begin deployment in time to capture the benefits of the 30% Solar Investment Tax Credit before it expires at yearend 2016. Further, a South Fork Community Microgrid should have a near-term target completion date so that it can be a testing ground for New York's Reforming the Energy Vision plans.

III. Conclusion

The Clean Coalition recommends that PSEG Long Island develop and timely deploy a Community Microgrid for Montauk substation in the South Fork to cost-effectively increase resilience, serve as a testing ground for New York's Reforming the Energy Vision, and provide a replicable model for increasing resilience across the state.

Sincerely,

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[2] For more information, see Advanced Inverters – Recovering Costs and Compensating Benefits, available at http://www.clean-coalition.org/site/wp-content/uploads/2013/10/October2013_SolarServer.pdf

The Hunters Point Project: A Model for Clean Community Power

In collaboration with Pacific Gas & Electric and in support of the city of San Francisco's goal to achieve a 100% renewable electricity supply, the Clean Coalition is spearheading a groundbreaking project in the Bayview and Hunters Point areas of San Francisco. The Hunters Point Project, part of the Clean Coalition's Community Microgrids Initiative, will prove that local renewables can fulfill at least 25% of total electric energy consumption while maintaining or improving power quality, reliability, and resilience. Policymakers and utility executives need to see real-world solutions in action to gain confidence in accelerating the transition to local renewables. The Hunters Point Project, which is named after the substation that serves the Bayview and Hunters Point areas of San Francisco, is designed to provide a world-class example that facilitates San Francisco, and communities around the globe, to reap the benefits from significant levels of local renewables – including economic, environmental, and resilience benefits.

Bayview-Hunters Point Community

Bayview-Hunters Point is a disadvantaged community within the City of San Francisco – a community that lacks economic opportunities and healthy environmental conditions. Hunters Point suffers one of the highest poverty rates in San Francisco with thirty percent of the families there earning less than $10,000 per year, and 72% of its African Americans living below the federal poverty level. Overall, the community's median annual household income is only $29,640 compared to San Francisco's average of $55,221.[1] One third of San Francisco's hazardous waste sites are located in this community, and the neighborhood was downwind from one of California's dirtiest power plants until community activism forced the plant's closure in 2010. One in six children in Hunters Point still suffer from asthma, and the occurrence of chronic illnesses is more than four times the statewide average.[2]

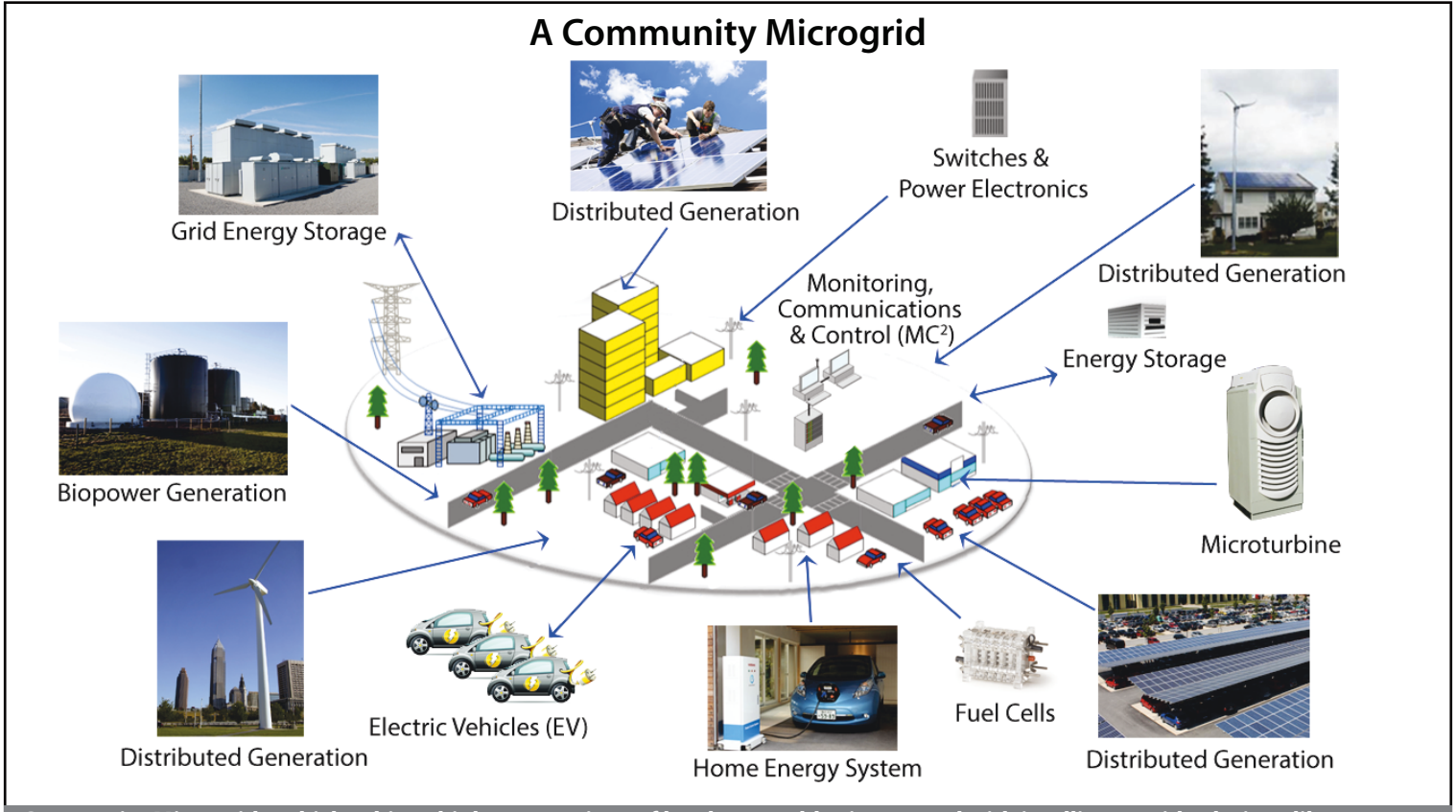
Project Overview

The City of San Francisco has targeted Hunters Point for significant economic and community redevelopment. The Hunters Point Project will advance the redevelopment goals by boosting the local economy through robust job creation and significant private investment in clean local energy.

Distributed generation refers to generating energy close to where it is consumed. Intelligent grid solutions – such as energy storage, advanced inverters, and demand response – enable high levels of local renewables by balancing the supply and demand of power and other vital grid services. Combining distributed generation with intelligent grid solutions enables 'Community Microgrids' that result in smarter, cleaner, and more resilient power systems.

The Hunters Point Project will demonstrate that local renewables can power communities with clean, affordable, and reliable energy. Importantly, this replicable Project will show how communities anywhere can stimulate their economies by embracing clean local energy. Community Microgrids strengthen local economies by attracting private investment, creating jobs, stabilizing energy prices, and keeping energy spend close to home. Early projects, like Hunters Point, will provide policymakers and utility executives with the empirical evidence needed to embrace clean local power systems with confidence.

[1] Hunters Point Family, Web, 30 August 2013, <http://hunterspointfamily.org/who-we-are/our-history/>
[2] Grid Alternatives. Web, 22 August 2013, <http://www.gridalternatives.org/planet/>



Community Microgrids, which achieve high penetrations of local renewables integrated with intelligent grid solutions like energy storage and advanced inverters, enable smarter, cleaner, and more resilient power systems.

Project Goals and Objectives

The Hunters Point Project is designed to prove the technical and economic feasibility of high penetrations of local renewables. Overall, the Project will serve as a model to modernize power systems with significant adoption of local renewables and intelligent grid solutions that bring the new energy economy to communities everywhere – along with improved environmental conditions and enhanced grid resilience.

Phase 1 of the Project, to be completed in 2014, will result in a replicable modeling platform that any community can use to evaluate Community Microgrid opportunities. Ultimately, the modeling platform will expedite the creation of Community Microgrids by efficiently simulating the ability of local renewables and intelligent grid solutions to balance the vital grid services (power, voltage, and frequency) locally and cost-effectively. Key Phase 1 activities include:

- Modeling and simulating the existing distribution grid
- Identifying sites for local renewables and intelligent grid solutions
- Modeling and simulating optimal scenarios for distributed resources
- Assessing benefits in terms of economics, environment, and grid resilience
- Engaging community stakeholders
- Providing recommendations for a cost and benefits optimized deployment

Phase 2 of the project, anticipated to be substantially completed by yearend 2015, will result in the actual deployment of the Hunters Point Community Microgrid recommended in Phase 1. Key Phase 2 activities include:

- Bringing approximately 50 megawatts of new local renewable capacity online in Hunters Point (for comparison, the entire County of San Francisco only has about 25 megawatts of local renewables deployed as of October 2013)
- Generating $233M in regional economic stimulation, including $100M in local wages, 1,270 near term job-years in construction and installation, and 520 job-years in ongoing regional employment
- Avoiding $80 million in transmission-related costs over 20 years
- Reducing GHG emissions by 78 million pounds and saving 15 million gallons of water annually
- Substantiating the business case that distributed generation boosts local economies by attracting significant private investment, stabilizing energy prices, and keeping energy spend local

The Hunters Point Project will create a Community Microgrid that is smarter, cleaner, more resilient; and will help San Francisco take the lead in the fast-growing clean energy economy.