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Clean Coalition Comments: Community Microgrid Initiative

Additional submitted attachment is included below.

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The Energy Commission is currently soliciting ideas and stakeholder input for the 2018 – 2020 EPIC Triennial Investment Plan. For those that would like to submit an idea for consideration in the 2018-2020 EPIC Triennial Plan, we ask that you complete the form below. Submittals are due by **5:00 p.m. on February 10, 2017.**

Part 1. Initiative Description and Purpose:

1. Please provide a brief description of the proposed initiative:

The Clean Coalition is conducting a Community Microgrid Initiative (CMI) that is perfectly positioned to extend the success of the CEC's Triennial Investment Plans into the 3rd TIP. A Community Microgrid is a new approach for designing and operating the electric grid, based on local renewables and other Distributed Energy Resources (DER) like energy storage, demand response, electric vehicles, energy efficiency, etc; and there is an intense need to get utilities to embark into this brave new energy world. A CEC version of the CMI will provide the following benefits:

* Facilitate California's being proactive about comprehensively assessing the benefits and costs of a DER-driven electricity system.
* Showcase that at least 25% of the total energy consumed within a distribution substation grid area can be sourced from local renewables.
* Ensure that the CEC's investments will allow for rapid and cost-effective proliferation and

2. What technical and/or market barriers would the proposed initiative help overcome? For scientific analysis and tools, what knowledge gaps would the proposed initiative help fill?

Technical barriers that would be overcome include the following:

* Monitoring, Communications, and Control (MC2) solutions for DER-driven grid operations.
* Grid sectionalization and customer shedding equipment that is needed for achieving real-time, and potentially autonomous, isolation of feeder segments that ensure local renewables, energy storage, and other DER and dedicated to critical loads for provisioning indefinite renewables-driven power backup to critical facilities.
* Tools for planning, designing, simulating, and developing Community Microgrids.
* Understanding that there are only three vital grid services: balancing power, voltage, and frequency; and that each of these vital grid services is dominated by a different metric respectively: capacity, location, and speed.

Part 2. Benefits and Impacts

3. If this initiative is successful, either fully or partially, what would be the expected impact? Who are the primary users and/or beneficiaries?

All ratepayers will benefit from DER, which Germany has already shown is less expensive that central generation when considering the exorbitant cost of transmission infrastructure.

All residents will benefit from clean local energy and the opportunity for more resilient communities through indefinite renewables-driven backup power.

4. Describe what quantitative or qualitative metrics or indicators would be used to evaluate the impacts of the proposed initiative:

Benefits of a Community Microgrid vs a traditional electricity system.

Costs of a Community Microgrid vs a traditional electricity system.

The Clean Coalition has conducted a extensive feasibility report for the Long Island Community Microgrid Project (LICMP) that shows ratepayers yield immediate savings by avoiding transmission investments and have lower operating costs ongoing as well. The LIMCP Feasibility Report is available at this Clean Coalition website:

http://www.clean-coalition.org/our-work/community-microgrids/

Additionally, the Clean Coalition recently helped set the stage for a game-changing solar +storage solution across multiple sites for the Island of Kauai that was announced in

5. Please provide a list of peer-reviewed references that support the responses for questions 3 and 4. Proposed initiatives that include peer-reviewed references will be given stronger consideration.

The basis for the Community Microgrid Initiative have been shown effective through white papers and pilot project case studies:
Industrial Economics, Inc. 2016. Long Island Community Microgrid Project Feasibility Study, Independent Third-Party Benefit-Cost Analysis, (Appendix A)
https://www.nyserda.ny.gov/-/media/NYPrize/files/studies/8-Town-of-East-Hampton.pdf
Independent confirmation of the value of the Clean Coalition•s Long Island Community Microgrid Project.

EPRI. 2014. The Integrated Grid: Realizing The Full Value Of Central And Distributed Energy Resources.
http://www.epri.com/abstracts/Pages/ProductAbstract.aspx?ProductId=000000003002002733
Grid modernization is critical for integration of solar, wind, electric vehicles and other clean

6. (For technologies only) What competitive advantages does the proposed technology solution have over current benchmark technologies? If the technology is beyond the prototype stage, what strategies do you suggest to bring to scale?

Part 3. Connection to Energy Commission's EPIC Framework

Energy Commission staff have developed a draft strategic framework to guide the CEC's planning and implementation of EPIC across triennial investment cycles. One of the objectives of the draft strategic framework is to communicate a consistent set of priorities for organizing current and future EPIC investments.

7. Please indicate which of the following strategic framework themes you feel the proposed initiative best fits within:
    - Advance Technology Solutions for Deep Energy Savings in Building and Facilities
    - Accelerate Widespread Customer Adoption of Distributed Energy Resources
    - Increase System Flexibility from Low-Carbon Resources
    - Increase the Cost-Competiveness of Renewable Generation
    - Create a Statewide Ecosystem for Incubating New Energy Innovations
    - Maximize Synergies in the Water-Energy-Food Nexus
    - Develop Tools and Analysis to Inform Energy Policy and Planning Decisions
    - Catalyze Clean Energy Investments in California's Underrepresented and Disadvantaged Communities