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Making Clean Local Energy Accessible Now

California Energy Commission
Re: Docket No. 11-IEP-1G

Clean Coalition Comments on Draft CEC Staff Report: Renewable Power in California: Status and Issues

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I. Introduction

The Clean Coalition is a California-based policy organization, part of Natural Capitalism Solutions, a non-profit entity based in Colorado. The Clean Coalition focuses on policies that deliver cost-effective and timely clean energy, including within the underserved "wholesale distributed generation" (WDG) market segment, which is comprised of wholesale generation projects interconnected to the distribution grid. Our members are active in proceedings at the Public Utilities Commission, Air Resources Board, Energy Commission, California ISO, the California Legislature, Congress, the Federal Energy Regulatory Commission, and in various local governments around California.

II. Summary

- California policy should focus on wholesale distributed generation and CLEAN Programs, which include feed-in tariffs. CLEAN contracts are the world's most effective market-based solution for deploying cost-effective, clean local energy now. WDG is the most cost-effective renewable energy market segment because it optimizes siting, unlike retail DG, and avoids the need for costly transmission upgrades required by large central station projects.
- Regional targets for reaching the Governor's goal of 12,000 MW of distributed generation should be set by setting baseline numbers based on load, and then adjustments should be made to those baseline targets through value metrics derived from policy objectives.
- California's electricity system must modernize, and the Clean Coalition

recommends policies that move the state towards an Intelligent Grid, and towards the vision of real time interconnection capacity and requirements modeling - Interconnection 3.0.

III. Comments

California Policy Should Focus on Wholesale Distributed Generation and Feed-In Tariffs

California policy should focus on the wholesale distributed generation (WDG) market segment. The Clean Coalition is highly supportive of Governor Brown's plan for California to generate 12,000 MW of distributed generation by 2020, and we believe that the majority of this should be dedicated to WDG. Beyond this segment's potential to provide most of the 12,000 MW in a cost-effective and timely manner, WDG appears best able to address and balance the major objectives and values expressed by the Governor, the Public Utilities Commission, and the Energy Commission and we are concerned to see it under represented in the draft proposal.

WDG also addresses many of the concerns with other types of renewable generation raised by the CEC on page 7 of the report, such as the need for costly and time consuming new transmission infrastructure, planning and permitting problems, environmental impacts, and financing gaps. Many of these concerns translate directly into increased costs for ratepayers, but can be avoided with effective policies.

WDG helps ratepayers avoid the costs of long-distance transmission of energy. Developing a new high-voltage transmission line to deliver electricity from a large-scale renewable power project to consumers often costs billions of dollars. As a result, local utilities pay a substantial fee for receiving energy from the transmission grid. The municipal utility for the City of Palo Alto calculates that Transmission Access Charges (TACs) and other cost factors associated with transmission currently add roughly 1.8 cents per kilowatt hour (kWh). Hence, transmission represents a substantial cost component of energy generation that is interconnected to the transmission grid. Transmission-dependent projects also increase inefficiencies. Transmitting energy across long distances results in significant loss of energy; and combined with distribution, losses in Californian range from 7.5-14%. Of course, the transmission-related costs are entirely avoided, and distribution losses greatly reduced, when energy generation is interconnected near load on the distribution grid for local use. WDG takes advantage of existing distribution grid capacity and opportunities to make cost-effective distribution grid upgrades, while reducing demand for transmission line capacity.

In addition to avoiding new transmission, policies designed to encourage WDG avoid environmental and planning concerns by enabling communities to repurpose or maximize the productivity of a variety of underutilized spaces such as

brownfields, parking lots, landfills, commercial properties and properties with tenants. WDG optimizes the use of these sites to serve local load beyond the limits of just serving onsite load, whereas in a net metering program, incentives are generally limited by the amount of energy a customer consumes. Maximizing the productivity of underutilized spaces has the added benefit of creating new streams of revenue for local governments. For example, local governments have an excellent opportunity to turn energy-intensive, costly water and wastewater treatment plants into sustainable, revenue-producing enterprises by converting the organic waste they produce into methane energy. These benefits cannot be captured through central station or retail distributed generation policies.

Looking at the financial viability of renewables, feed-in tariffs support secure, low-cost private financing. The predictability comes from the long-term flat rate feed-in tariff is attractive to private investors, making WDG projects easy to finance without relying on subsidies, rebates, or other expenditures by federal, state or local governments. This predictability means steady and predictable growth in WDG procurement, which will in turn support a predictable market for private investment in labor and technology.

WDG supports cost effective renewable energy today. The reduction of costs, risks, and timeframes associated with WDG leads to a dramatically greater number of local project installations, which in turn results in greater economies of scale, driving down local renewable energy system installation costs further, in a short amount of time. As the CEC recognized in the latest IEPR, the most effective policy for accelerating the development of WDG is a feed-in tariff. The Clean Coalition encourages the CEC to focus state policies on WDG and feed-in tariffs to drive investment and deployment of high levels of renewable generation.

Regional Renewable Generation Targets

Regional targets can help capitalize on opportunities and benefits of DG. If incorrectly set, however, regional targets may lead to inefficiencies. The methodology proposed by the Commission staff is a complex mix of factors, many of which use market trends as a proxy for future development. However, factors such as past market trends are disconnected from current policy goals. The lack of agreed policy goals within the 12,000 MW DG target makes the regional target methodology highly controversial. As the Clean Coalition recommended in the wake of the Governor's Conference on Local Renewable Resources,, the Commission should develop a target-setting methodology that is clearly based on policy objectives to encourage the development and implementation of DG in locations that are the most beneficial towards the state's goals.

The Clean Coalition recommends a three-step approach to developing regional targets. This method begins by setting a baseline development target number based on a region's proportion of statewide energy usage, allocating to that region the same proportion of the 12,000 MW. These allocations can then be "dialed" up or down for each region based on different value metrics derived from policy

objectives. Establishing a set of core values on which to base regional targets will optimize the location of DG in relation to state goals.

These value metrics should be based on pre-defined policy values that will determine where to locate DG within the state. For example, if job-creation in low-income communities was a defined value, low-income counties could have their MW targets "dialed up" to encourage investments and job growth. If another value stressed low costs, locations with available load where little or no grid upgrades would be needed could be dialed up, giving them a greater megawatt target. Some of the policy objectives and values that may be considered include employment, pollution, economic development, grid resilience, or ratepayer value.

Using the Clean Coalition's methodology results in targets that are transparent, deterministic, and justifiable. Progress (or lack thereof) towards these targets will then provide indicators for needed policy change. Targeted policy change will then lead to development of DG in locations with the most benefits to the state, allowing DG to provide a large percentage of California's renewables at a highly competitive price.

Intelligent Grid and Interconnection

California's electric grid and interconnection process must be modernized. Grid operators should plan for foreseeable opportunities and benefits of modernization and implement grid data collection and control capacity as part of modernization. Specifically, the Clean Coalition advocates for policies that move the state towards an Intelligent Grid, and towards the vision of Interconnection 3.0, as defined below.

The grid itself is old and in need of upgrades, which should be done in a purposeful manner that supports high-penetration of distributed generation while enhancing power quality and reliability. Transitioning to a the efficiencies of high levels of demand response, electric vehicle integration and distributed renewable energy future will require statewide deployment of an Intelligent Grid, including the overlaying of a comprehensive electronic control and communication system on the current power grid.

An intelligent grid will allow for power to flow safely from thousands of small generators across the state in any direction to meet load, while anticipating the intermittency of wind and solar power to keep electricity supply in absolute balance with consumer demand at all times. This will allow automatic correction for power supply variability, optimize power supply and delivery, minimize line losses, self-correct problems, enable maximum use of renewable energy resources, and substantially increases energy efficiency. Integrated planning should anticipate and drive these capabilities, and support early deployment of systems that can make use of them.

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Complimentary to the Intelligent Grid is Interconnection 3.0. Interconnection 3.0, refers to a future interconnection system that relies on the most up-to-date information technology and grid modeling. Rather than waiting years for interconnection studies, as is often the case with the current procedures, or six to twelve months (the hoped-for outcome of the Rule 21 reform effort), Interconnection 3.0 will allow parties to anticipate requirements related to site selection and interconnection application, obtain phase I studies within a matter of days, make a decision about how to proceed and then receive the results of Phase II studies within days also. In short, such grid awareness and modeling will radically improve current interconnection planning and study procedures.

This vision is possible because modeling software is currently being developed such that current procedures that rely heavily on engineering judgment and antiquated procedures may be eliminated or improved. With a robust grid model, each utility will be able to simply plug in the applicant's data and receive information with respect to necessary upgrades and the costs of such upgrades literally within seconds or minutes.

A number of parties are already working on aspects of this vision, including Cisco, IBM, UC Berkeley, and EnergyNet. EnergyNet has completed preliminary work for the CPUC showing how utilities can model their grids far more robustly and provide actionable interconnection data.

The Clean Coalition is spearheading a regulatory and legislative push for Interconnection 3.0 to be realized by 2013-2014. We welcome support from the CEC.

While grid and interconnection modernization is desperately needed, there is no reason to further delay DG growth in the interim, and implementation should be designed to avoid burdening generators with prohibitive and unnecessary costs.

Respectfully Submitted,

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