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California Energy Commission Dockets Office
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512

Re: Docket No. 11-IEP-1G, Renewables

Dear *Integrated Energy Policy Report* Committee and Staff:

The California Solar Energy Industries Association welcomes this opportunity to contribute to the discussion of how to implement the portion of Governor Brown's Clean Energy Jobs Plan (Plan) now referred to as "12 GW of localized energy by 2020." Our comments respond to questions raised during the Integrated Energy Policy Report (IEPR) workshop on May 9, 2011.

Definitions Needed

We note the term "localized energy" is used in Governor Brown's Plan rather than "distributed generation (DG)," but believe this term refers to the same types of projects as DG does: "... onsite or small energy systems located close to where energy is consumed that can be constructed quickly (without new transmission lines) and typically without any environmental impact..."¹

If "localized energy" has a different meaning, would you please explain the difference?

Also, please list the technologies and applications that meet the definition of "localized energy."

Expand Definition to Include Solar Thermal Energy Generation

Although the "localized energy" goal is expressed in terms of installed electrical capacity (that is, GW), CALSEIA recommends that solar thermal energy systems (also called solar heating and cooling systems)

¹ Excerpted from Clean Energy Jobs Plan at <http://www.jerrybrown.org/jobs-california%E2%80%99s-future>.

be included in the definition of “localized energy” as well, because they “generate” useful energy close to where it is consumed.

Solar thermal energy systems are sized to provide some fraction of a building’s or facility’s on-site demand for water heating, pooling heating, space heating and cooling, and/or process heating and cooling. In addition to traditional solar water-heating systems that use flat-plate collectors, concentrating solar thermal collectors are capable of generating high-temperature hot water (for example 400⁰F) for commercial, agricultural, institutional or industrial applications. Solar thermal systems, for example, can be paired with thermally driven chillers to provide air conditioning or process cooling, thereby displacing electricity. Other solar thermal applications generate heat to displace on-side demand for natural gas. Broader adoption of solar heating and cooling systems would help California achieve its greenhouse gas emission reduction goals and its Zero Net Energy building goals.

Output from solar heating and cooling systems can be measured directly with flow and thermal (British thermal unit) meters. The capacity of a solar thermal system is expressed as kiloWatt-thermal (kW_{th}). This capacity metric is used by program administrators of the CSI-Thermal program.²

Don’t Set Regional Targets

The Governor’s eight-point plan didn’t recommend where the localized energy projects should be built, except it provided the following preferences:

- “... Solar systems of up to 2 megawatts should be installed on the roofs of warehouses, parking lot structures, schools, and other commercial buildings *throughout the state*.” (emphasis added)
- “Solar energy projects up to 20 megawatts in size should be built on public and private property *throughout the state*. For example, we should create the California Solar Highway by placing solar panels alongside our state highways...” (emphasis added)

Given the Plan’s direction that “localized energy projects” be installed “throughout the state,” CALSEIA questions the need to allocate the 12 GW geographically by setting “regional targets.” Furthermore, setting regional targets at this time may be premature.

CALSEIA recommends that the criteria used to set regional targets be discussed first, because regional targets will vary, depending on which criteria are used. For example, the California counties with the greatest electrical energy consumption per square mile differ completely from the California counties with the greatest electrical energy consumption per capita.

If Regional Targets Must Be Set, Use Need for Local Generation as a Criteria

If regional targets must be set by this Plan, CALSEIA suggests that one criterion should be “need” for localized energy to serve peak demand. Specifically, some portion of the 12 GW goal should be directed to meeting the need for “localized generation” within local reliability areas (load pockets and subpockets).

The Energy Commission published on its website locations of local reliability areas and subareas in four regional maps.³ These maps not only show the boundaries of named local reliability areas, they quantify

²http://www.estif.org/fileadmin/estif/content/news/downloads/Joint_PR_solar_thermal_capacity.pdf.

the local capacity requirements and deficiencies in MW, based on North American Electric Reliability Corporation's criteria. Currently, Energy Commission staff is determining updated capacity requirements for each load pocket as part of its work for the 2011 IEPR. Perhaps the findings from this staff analysis could be used to set some portion of the 12 GW goal. Specifically, it would be useful to know how much of the 12 GW goal might be deployed in load pockets and subpockets to overcome capacity deficits and how much of the 12 GW goal would remain after this regionally targeted allocation.

Another methodology for setting regional targets based on the need for localized energy is to use the data published by the CAISO in locational marginal pricing contour maps.⁴ These maps color-code prices paid to generators at 3,000+ nodes within the CAISO balancing authority. It would be useful to identify the locations of nodes that pay generators the highest prices (that is, \$125-\$150, \$150-\$200, and >\$200) and the months (and hours) when these prices occur. In other words, which locations in California are the most expensive to serve electrically?

In addition, the IOUs are publishing maps on their websites indicating where distribution capacity currently exists to accommodate new DG interconnections. CALSEIA recommends this mapping information be combined with the load-pocket maps to identify preferred sites for new DG projects.

Consider Allocating the 12 GW Goal by Procurement Strategy

California has renewable energy procurement programs available to encourage both private and public investment in renewable energy DG. These programs include:

- Net-metering. Consumers with monthly electrical surpluses receive bill credits, which are priced by retail rate schedule. Net metered customers also receive compensation for net surplus generation annually. (NOTE: Net-metering is not offered to electric customers served by the Los Angeles Department of Water and Power.)
- Rebates and performance-based incentives. California's three investor-owned utilities and 47 publicly owned electric utilities⁵ provide financial incentives to customers, who purchase solar electric systems. Today, some POUs have stopped accepting rebate applications, because consumer demand exceeds the electric utility's fiscal-year budget for its solar program. In addition, non-residential consumers in IOU service territories are now wait-listed due to a projected budget shortfall. To overcome the shortfall, the CPUC recently identified funding intended for CSI-Thermal program participants, who displace electricity by installing solar water heaters. CALSEIA and the Solar Alliance are supporting SB 585 (Kehoe) to increase revenue collection from electric ratepayers so that solar commercial projects can receive performance-based incentives through the CSI-general market program.⁶ The Self Generation Incentive

³ See http://www.energy.ca.gov/maps/infrastructure/LCR_Northern.html, http://www.energy.ca.gov/maps/infrastructure/LCR_Central.html, http://www.energy.ca.gov/maps/infrastructure/LCR_Southern.html, and http://www.energy.ca.gov/maps/infrastructure/LCR_Enlargement_Area.html

⁴ Snapshots of day-ahead and real-time prices for electricity are published at http://oasis.caiso.com/mrtu-oasis/lmp/maps_home.html.

⁵ For the list of POUs, see http://www.energy.ca.gov/sb1/pou_reports/index.html.

⁶ For the status and latest amended version of SB 585, see http://www.leginfo.ca.gov/cgi-bin/postquery?bill_number=sb_585&sess=CUR&house=B&author=kehoe.

Program (SGIP) is another financial incentive program for commercial, industrial, and agricultural customer adoption of distributed generation technologies that pass successfully through eligibility screens. Lastly, the Energy Commission provides incentives for small wind and fuel cell projects through its Emerging Renewables Program (ERP) and for solar PV installations by new homebuilders under the New Solar Homes Partnership (NSHP) program.

(NOTE: CALSEIA listed above net-metering separately from the financial incentive programs, but these programs serve the same market: the “customer side of the meter.” Any allocation of the 12 GW goal to projects on the “customer-side-of-the-meter” must avoid double-counting participation in both programs.)

- Feed-In Tariff
- Reverse Auction Mechanism (now called “renewable” auction mechanism)
- Utility-owned solar PV. PG&E, SCE, and SDG&E have authority to own up to 500 MW, 500 MW, and 100 MW of solar PV systems, respectively. Each utility’s procurement program varies by maximum size of system.
- State agency procurement. The State of California is a major energy user and, therefore, has a role in implementing Governor Brown’s 12 GW goal. In addition, state agencies could participate in the FIT and RAM by developing their own projects or by making acceptable sites available to private developers.

CALSEIA recommends allocating the 12 GW goal among these procurement strategies as follows:

- 6 GW – Customer-side-of-the-meter programs (net-metering, CSI, SGIP, ERP, NSHP, and portion of state-agency procurement)
- 3 GW – FIT (that is, implementing Senate Bill 32) for projects up to 3 MW
- 3 GW – RAM and utility-owned generation for projects up to 20 MW

Customer-Side Procurement Recommendations

For the 6 GW of localized energy that would be procured on the customer-side of the meter, CALSEIA recommends the following:

- Expand the performance-based incentive portion of the CSI program.
- Raise eligibility to 1.5 MW projects, but retain on-site load size limit.
- Mandate performance data collection.
- Allow community net metering (such as, SMUD’s Solar Shares program).
- Raise the capacity cap for net metering to accommodate 6 GW.
- Apply to on-site renewable energy, including solar PV, solar thermal, and wind.
- Explore new financial incentive mechanisms and financing programs for residential and small commercial consumers, (such as, providing solar rebates under existing utility energy efficient-appliance rebate programs, and working with local credit unions and bank to provide long-term, low-interest loans for solar PV and water-heating systems).

- Implement the tradable Renewable Energy Credit program and encourage post-CSI consumers to sell their RECs.

Furthermore, CALSEIA requests that information on the status of POU's solar incentive programs be more transparent and updated more frequently than once a year on the Energy Commission's website. (For example, the most recent information is dated December 31, 2009.⁷) As a result, we don't know how close each POU is to achieving its share of the 3,000 MW goal (except SMUD, which reported at the May 9 workshop that it has installed approximately 35 MW of its 125 MW share).

Lastly, CALSEIA does not support counting the solar PV systems that have been installed already under the CSI and SB1 programs as contributions toward the Governor's 12 GW goal. The 6 GW goal should apply to newly installed systems, because the purpose of the goal is to create "clean energy jobs" in local communities.

FIT-Procurement Program Recommendations

CALSEIA believes FIT implementation will be the key procurement strategy for achieving the Governor's localized energy goal and urges the CPUC and Energy Commission to work together to implement SB 32 in 2011.

SB 32 (Chapter 328 of the Statutes of 2009)⁸ created an initial goal of installing 750 MW of small-scale (up to 3 MW) renewable energy generation in the service territories of the IOUs and nine, largest POU's. The capacity obligation is allocated according to each utility's contribution to the state's peak demand.

The CPUC began working on FIT implementation in January 2011.⁹ CALSEIA's opening brief recommends a phased implementation of this program and provides suggested program design details for the FIT's first phase.¹⁰ CALSEIA requests the Energy Commission staff to read these first-phase recommendations, because they contain key elements to a successful FIT program and would be important input to achieving the 12 GW goal as well.

To implement the FIT program to achieve 3 GW, CALSEIA recommends the following:

- Expand and strengthen the FIT program before it reaches SB 32's 750 MW cap
- Emphasize small projects located close to load
- Encourage everyone to participate – small businesses, landowners, local governments, commercial building owners, farmers
- Continue to provide an expedited interconnection process

⁷ See http://www.energy.ca.gov/sb1/pou_reports/index.html

⁸ http://www.leginfo.ca.gov/pub/09-10/bill/sen/sb_0001-0050/sb_32_bill_20091011_chaptered.pdf

⁹ See January 27, 2011 ruling under R.08-08-009 at <http://docs.cpuc.ca.gov/efile/RULINGS/130077.pdf>.

¹⁰ See CALSEIA's implementation proposal on Pages 6 through 11 at <http://docs.cpuc.ca.gov/efile/BRIEF/132250.pdf>.

RAM Procurement Program Recommendations

The CPUC decided in December 2010 to direct the three largest IOUs to procure up to 1,000 MW of renewable generation from facilities up to 20 MW in size through RAM. “The RAM employs an auction, wherein sellers which meet certain minimum criteria are eligible to submit non-negotiable price bids. The [buying utility] then selects winning sellers based on the lowest price.”¹¹ In April 2011, however, the CPUC decided to allow the IOUs to negotiate bilaterally with developers “for projects that cannot reasonably participate in RAM due to unique attributes.”¹²

CALSEIA recommends the RAM program be implemented with the following features:

- Select projects that meet the Plan’s definition of “localized energy.”
- Limit the number of projects awarded to any one company.
- Disclose information about RAM (and associated bilateral contracts) projects in the same level of detail as is disclosed now for projects receiving CSI incentives.
- Discourage speculation and queue “squatting” by enforcing evidence-of-progress milestones and by disallowing companies selected under RAM solicitations from selling or assigning their project-development rights to other companies.
- Provide a more transparent and simple process for interconnection.

State-Agency Procurement Recommendations

CALSEIA recommends the following for localized energy projects built on or at State facilities:

- Limit project size to 20 MW
- Require revenue-sharing with the State
- Modify state land-leasing rules, if needed
- Create a clearinghouse on the DGS website listing competitive solicitations for DG projects issued by all state agencies.
- Create model RFQs and RFPs for use by different agencies (including local governments and school districts).
- Standardize proposal formats so that companies can easily respond to multiple solicitations. For example, use common templates for statements of work, budgets, schedules of deliverables, and reporting requirements.
- Review State contract’s standard terms and conditions and eliminate requirements that discourage small-business participation, such as onerous indemnification clauses.

¹¹ RAM definition from CPUC Decision 10-12-048, Page 26,
http://docs.cpuc.ca.gov/word_pdf/AGENDA_DECISION/127465.pdf

¹² CPUC Decision 11-04-008 issued April 2011, page 9,
http://docs.cpuc.ca.gov/word_pdf/FINAL_DECISION/133897.pdf.

NOTE: The Energy Commission Staff Report, *Developing Renewable Generation on State Property*, eliminated many state buildings from consideration as potential DG sites, because they had not already implemented energy efficiency improvements, per the loading order. CALSEIA requests California's energy policymakers to consider whether the current method of implementing the loading order might be creating barriers to building-sited DG, which is resulting in an unintentional preference for ground-mounted systems.

Utility-Owned Generation

CALSEIA supports utility-owned distributed generation, provided it is sited in areas close to distribution.

Sincerely,

GARY GERBER,
President of the Board of Directors
California Solar Energy Industries Association