CALIFORNIA ENERGY COMMISSION
1516 Ninth Street
Sacramento, California 95814

Main website: www.energy.ca.gov

In the matter of,	)	Docket No. 12-IEP-1D
	)	
2012 Integrated Energy Policy Report	)	WORKSHOP
Update (2012 IEPR Update)	)	RE: Identifying and Prioritizing
_____	)	Areas for Renewable Development

Lead Commissioner Workshop on Identifying and Prioritizing Geographic Areas for Renewable Development in California

The California Energy Commission Lead Commissioner on the Integrated Energy Policy Report (IEPR) will conduct a workshop to gather input on identifying and prioritizing geographic areas in California for both renewable utility-scale and distributed generation development. Commissioner Carla Peterman oversees the *2012 Integrated Energy Policy Report Update.* Other Commissioners may attend the workshop. Other agency representatives may also attend and participate.

THURSDAY, MAY 10, 2012
Beginning at 9 a.m.
CALIFORNIA ENERGY COMMISSION
1516 Ninth Street
First Floor, Hearing Room A
Sacramento, California
(Wheelchair Accessible)

Remote Access Available by Computer or Phone via WebEx™
(Instructions below)

Agenda

The purpose of this workshop is to seek input from experts, stakeholders, and the general public on:

- Preferred characteristics of priority areas for renewable development in California.
- Current efforts, strategies, and best practices that could be used to help identify priority areas with those preferred characteristics.
- Developing local goals to build toward the statewide goal of 12,000 megawatts of renewable distributed generation (see attachment).

This workshop will provide information needed to implement the following overarching strategy to address barriers to renewable development that was identified in the Energy Commission's *Renewable Power in California: Status and Issues* report:

> *Identify and prioritize geographic areas in the state for both renewable utility-scale and distributed generation development, particularly distributed generation. Priority areas should have high levels of renewable resources, be located where development should have the least environmental impact, and be close to planned, existing, or approved transmission and distribution infrastructure. Prioritization should also include increasing efforts between state, local, and federal agencies to coordinate local land use planning and zoning decisions that promote the siting and permitting of renewable energy-related infrastructure in preferred areas.*

The lead commissioner will consider input from this workshop together with other information from the *2012 IEPR Update* proceeding to develop specific strategies and action items to promote renewable development in the highest priority areas within California.

Background

Governor Brown's Clean Energy Jobs Plan directed the Energy Commission to develop a plan to expedite permitting of the highest priority renewable generation and transmission projects. As part of the *2011 Integrated Energy Policy Report*, the Energy Commission prepared the *Renewable Power in California: Status and Issues* report which discussed challenges to renewable development and current efforts to address those challenges.

The report identified five high-level strategies to address challenges to renewable development. These strategies, including the strategy that is the subject of this workshop, are the foundation for a more comprehensive renewable strategic plan that is being developed under the *2012 Integrated Energy Policy Report Update* proceeding.

Public Comment

Oral Comments. The IEPR Lead Commissioner will accept oral comments during the workshop. Comments may be limited to three minutes per speaker. Any comments will become part of the public record in this proceeding.

Written Comments. Written comments should be submitted to the Dockets Unit by **May 17, 2012.** Written comments will also be accepted at the workshop, however, the Energy Commission may not have time to review them before the conclusion of the workshop. All written comments will become part of the public record of this proceeding. Additionally, written comments may be posted to the Energy Commission's website.

The Energy Commission encourages comments by e-mail. Please include your name and any organization name. Comments should be in a downloadable, searchable format such as Microsoft® Word (.doc) or Adobe® Acrobat® (.pdf). Please include the docket number 12-IEP-1D and indicate "Identifying and Prioritizing Geographic Areas in California" in the subject line. Send comments to docket@energy.ca.gov and copy the technical lead staff at Heather.Raitt@energy.ca.gov.

If you prefer, you may send a paper copy of your comments to:

California Energy Commission
Dockets Office, MS-4
Re: Docket No. 12-IEP-1D
1516 Ninth Street
Sacramento, CA 95814-5512

Public Adviser and Other Commission Contacts

The Energy Commission's Public Adviser's Office provides the public assistance in participating in Energy Commission proceedings. If you want information on how to participate in this forum, please contact the Public Adviser's Office at
(916) 654-4489 or toll free at (800) 822-6228, or by e-mail at PublicAdviser@energy.ca.gov.

If you have a disability and require assistance to participate, please contact Lou Quiroz at LQuiroz@energy.ca.gov or (916) 654-5146 at least five days in advance.

Media inquiries should be sent to the Media and Public Communications Office at (916) 654-4989, or mediaoffice@energy.ca.gov.

If you have questions on the technical subject matter of this meeting, please call Heather Raitt, Assistant Executive Director, at (916) 654-4735 or by e-mail at Heather.Raitt@energy.ca.gov. For general questions regarding the IEPR proceeding, please contact Lynette Green, IEPR project manager, at (916) 653-2728 or Lynette.Green@energy.ca.gov.

The service list for the *2012 IEPR Update* is handled electronically. Notices and documents for this proceeding are posted to the Energy Commission website at [www.energy.ca.gov/2012_energypolicy/index.html]. When new information is posted, an e-mail will be sent to those on the energy policy e-mail list server. We encourage those who are interested in receiving these notices to sign up for the list server through the website www.energy.ca.gov/listservers/index.html.

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Availability of Documents

Documents and presentations for this meeting will be available online at: www.energy.ca.gov/2012_energypolicy/index.html

Date: April 25, 2012

CARLA PETERMAN
Lead Commissioner
2012 Integrated Energy Policy Report

Mail Lists: energypolicy, renewable, distgen

Attachment:
Developing Local, Soft Targets to Achieve 12,000 MW Distributed Generation Goal

Introduction

The Governor's Clean Energy Jobs Plan sets a goal to develop 12,000 megawatts (MW) of distributed generation (DG) by 2020. Achieving that goal is a major undertaking, but like any large task, breaking it down into its component parts can provide a starting point for moving forward. Developing local targets that build up to the statewide goal is also useful because many of the development issues are addressed on a local level. For example, local permitting practices can affect project cost. Also, most of these projects are interconnected to the local distribution grid which is not homogenous throughout the state, and location-specific characteristics of the distribution grid affect project development costs. Local targets can also help address environmental justice concerns and target job creation in low-income communities. Thus, regional targets that build up to the 12,000 MW goal is a good starting point to help advance meeting and measuring progress.

This paper updates staff's initial methodology to establish local soft targets for DG development that was proposed in 2011. Whereas the 2011 approach was based on a ground up analysis of potential market expansion from existing programs, the methodology proposed here allocates DG development targets weighted for local energy consumption, income levels, employment levels, and grid capacity. The revised methodology and results will be discussed at an Energy Commission Integrated Energy Policy Report workshop scheduled on May 10, 2012.

Background: Previous Staff Proposals

The Energy Commission presented a methodology for developing soft targets at the May 9, 2011 IEPR workshop titled "Distributed Generation – Getting to 12,000 MW by 2020"and again at the Governor's Conference on Local Renewable Energy Resources.[1]The methodology staff presented at those forums generally looked at market and program activity to date and scaled up past trends to meet 12,000 MW.

For the May 9, 2011 workshop, the analysis resulted in 5,000 MW behind the meter generation, and 7,000 MW of wholesale generation disaggregated for county-specific goals. A total of 31 parties representing utilities, environmental groups, developers, environmental justice advocates, and local government provided written comments to the Energy Commission.

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[1] Please see the May 9, 2011 IEPR proceedings at http://www.energy.ca.gov/2011_energypolicy/documents/. Please see the Governor's Conference on Localized Renewable Energy Resources at http://gov.ca.gov/s_energyconference.php.

Retaining the market-based bottom-up approach, the Energy Commission staff revised the regional targets for the Governor's conference. Staff modified the analysis to provide more emphasis on development in low income areas, account for capacity to interconnect on local distribution lines, and include a broader mix of technologies. In addition to targets for behind the meter and wholesale generation, staff included a category called "undefined mix" that could be any combination of behind the meter and wholesale DG. With the undefined mix, the analysis was intended to be less prescriptive and more open to future market developments. The result of this analysis was 5,210 MW of behind the meter generation, and 3,420 MW of wholesale generation, and 3,370 MW of the undefined mix. Staff developed targets for 13 regions in the state rather than by county.

Comments from the May 9th IEPR workshop, the Governor's Conference on Local Renewable Energy Resources and the September 14, 2011 staff workshop on the draft *Renewable Power in California: Status and Issues* informed the current methodology as well as comments received from parties on the final 2011 IEPR.

For instance, the Clean Coalition recommends that targets for "distributed generation should be set by setting baseline numbers based on load..."[2] The Environmental Health Coalition and California Justice Environmental Justice advocate for higher distributed generation goals in disadvantaged areas where renewable energy development "can bring in prosperity and opportunity to local energy businesses and entrepreneurs."[3] Pacific Gas and Electric (PG&E) suggest that "net economic impact and job creation" are top priorities for targeting renewable energy development.[4]

[2] http://www.energy.ca.gov/2011_energypolicy/documents/2011-09-14_workshop/comments/Clean_Coalitions_Comments_on_Draft_CEC_Staff_Report_TN-62527.pdf

[3] http://www.energy.ca.gov/2011_energypolicy/documents/2011-09-14_workshop/comments/EHC_and_CEJA_Comments_on_Renewable_Power-_Status_and_Issues_TN-62596.pdf

[4] http://www.energy.ca.gov/2011_energypolicy/documents/2011-09-14_workshop/comments/PGandE_Comments_on_the_CEC_Staff_Draft_Report_Renewable_TN-62521.pdf.

Many local government stakeholders attending the Governor's Conference on Local Renewable Energy Sources on June 25, 2011 recommended communicating the targets at the county and/or city level to align with local land use and permitting processes. Southern California Edison noted that the "targets provided currently do not inform the utilities of their respective obligations" and that the targets should include utility targets as well "to ensure that all load serving entities contribute equitably to achieving the goals laid out in the Governor's Plan."[5]

Revised Data, Methodology, and Results

Based on stakeholder comments, Energy Commission staff is proposing a new methodology and revised geographic targets. The analysis presented here uses regional electricity consumption as the baseline for allocating targets. This baseline is then adjusted to target further development in areas that are suffering relatively greater economic downturn or have relatively low employment rates compared to the state as a whole. The baseline is also adjusted to target areas that have the greatest technical potential for adding DG. Additionally, based on comments regarding the need to communicate the targets into land use requirements and resource planning, the revised targets presented here are for counties and are also aggregated to utilities. Below is a description of the data sources, the methodology used to assign "soft targets" to counties and utilities, and the targets themselves.

Data

In this analysis, the Energy Commission staff use data on 2010 electricity consumption by county by utility, low and moderate ("low/mod") income persons by county and unemployed persons by county.

2010 Electricity Consumption

Total electricity consumption by county and by utility comes from the California Energy Consumption Database (CECD), a subset of the Energy Consumption Data Management System (ECDMS).[6] Staff calculated percent of statewide electricity consumption for each county. For example, in 2010 Los Angeles County consumed 63,575,981.97 MWhs of electricity, representing 24.33 percent of California's total consumption of 261,305,262.30 MWhs of electricity. The share of total statewide electricity consumption for each county serves as one criterion in the Energy Commission's calculation of county targets.

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[5] http://www.energy.ca.gov/2011_energypolicy/documents/2011-09-14_workshop/comments/SCE_Comments_On_Draft_Renewable_Power_in_California-S_TN-62526.pdf

[6] Data accessed on October 20, 2011 from http://ecdms.energy.ca.gov/.

Low and Moderate Income Persons

Data on the number of low/mod persons in each county is from the U.S. Department of Housing and Urban Development's (HUD) Low/Mod Data for fiscal year 2011.[7]The data reports the total number of low/mod persons in each census block group in each county. According to HUD, low/mod persons are persons that earn 80 percent or less of metropolitan and non-metropolitan median income. Low/mod data is a critical source of information for HUD, state agencies, and local governments that implement the Community Development Block Group (CDBG) program which targets resources to meet lower-income needs. Staff uses the low/mod statistics as a mechanism to target DG development in economically depressed areas and to help address environmental justice concerns. The Energy Commission staff aggregated each census block group by county to determine the total number of low/mod persons in each county. Staff calculated the percent of total statewide low/mod persons in each county. For example, in Los Angeles County HUD reports that 4,195,537 persons are low/mod, which is 29.41 percent of the 14,264,677 low/mod persons in the state. The share of total statewide low/mod persons for each county serves as one criterion in the Energy Commission's calculation of county targets.

Unemployment

Data on the number of unemployed persons in each county is from the California Employment Development Department's (EDD) Monthly Labor Force Data for Counties, dated September 2011.[8]Staff calculated the percent of total statewide unemployed persons in each county. For example, in Los Angeles County there are 597,200 unemployed persons in 2011, representing 28.87 percent of the 2,068,630 unemployed persons in California. The share of total statewide unemployed persons for each county serves as one criterion in the Energy Commission staff's calculation of county targets.

Distribution System Capacity

Data for distribution system capacity and costs come from Energy + Environmental Economics' (E3) preliminary assessment of the Technical Potential for Local Distributed Photovoltaics in California.[9] E3 developed a variety of solar PV scenarios to determine the technical potential, costs, and benefits of local distributed solar PV in California. Energy Commission staff used E3's 100% Learning Curve Results by County Least Net Cost Scenario (LNCS) to estimate technical distribution system capacity in each

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[7] Data accessed on October 18, 2011 from http://www.hud.gov/offices/cpd/systems/census/ca/index.cfm.

[8] Data accessed from Report 400 C on October 28, 2011 from http://www.labormarketinfo.edd.ca.gov/?pageid=1006.

[9] Retrieved from http://www.cpuc.ca.gov/NR/rdonlyres/8A822C08-A56C-4674-A5D2-099E48B41160/0/LDPVPotentialReportMarch2012.pdf

county.[10] Staff chose to use this scenario to align with the current High DG scenario in the update to CAISO's 2012-2013 Transmission Planning Process (TPP).[11]

The LNCS estimates the maximum capacity of all IOU substations. Maximum capacity is the amount of solar PV generation that can connect to each substation with no backflow to the transmission grid. In many instances, the no backflow criterion exceeds the current 15 percent criterion under Rule 21. According to E3, the total distribution system capacity meeting the no backflow criterion is 15,338 MWs.

E3 estimates the technical nameplate capacity available for each substation at the county level. To determine total capacity by installation type (i.e. residential and commercial rooftops and ground mount systems up to 20 MW) E3 used GIS to determine the proximity of available built and un-built land to each substation. For purposes of calculating "soft targets" staff used the total capacity in each county as a share of the total capacity reported by E3. For example, E3 reports that in Los Angeles County there is 2,806 MWs of distribution capacity that meets the no backflow criterion. Of the total capacity (15,338 MWs) across all counties, Los Angeles County's share is equal to 18 percent. The share of available capacity in each county serves as one criterion in the Energy Commission's calculation of county targets.

Methodology

Staff used a simplified approach to allocating the Governor's goal of 12,000 megawatts of distributed generation to each of the State's 58 counties. This iteration employs a methodology built on electricity consumption, economic and employment opportunities, and an estimate of technical potential.

The criterion presented in the previous section serves as the basis for allocating the 12,000 megawatt goal. To capture stakeholder recommendations and priorities of the Governor's Clean Energy Jobs Plan, each of the criterions discussed above is individually weighted, and can be adjusted depending upon policy priorities. For this analysis, staff weighted the criteria as follows:

- electricity consumption is weighted 40 percent
- low/mod persons is weighted 20 percent,
- unemployed persons is weighted 20 percent, and
- distribution system capacity is weighted 20 percent.

The following formula is applied to the data discussed above:

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[10] See the table starting on A-67 at http://www.cpuc.ca.gov/NR/rdonlyres/8A822C08-A56C-4674-A5D2-099E48B41160/0/LDPVPotentialReportMarch2012.pdf

[11] See presentation from 3/29/2012 http://www.caiso.com/Documents/CEC_CPUC_Presentation-2012-2013TransmissionPlanningProcess-RenewablePortfolioAssumptions.pdf

$$T = \frac{(Ci * 0.40) + (Li * 0.20) + (Ui * 0.20) + (Di * 0.20)}{12{,}000\ MW}$$

T= county target in megawatts
C*i*= share of statewide consumption in the *i*th county
L*i*= share of statewide low/mod in the *i*th county
U*i*= share of statewide unemployment in the *i*th county
D*i*= share of statewide distribution system capacity in the *i*th county

For example, Los Angeles County's share of the 12,000 megawatt goal is calculated as follows:

$$3{,}005.61\ MW = \frac{(0.2433 * 0.40) + (0.2941 * 0.20) + (0.2887 * 0.20) + (0.1829 * 0.20)}{12{,}000\ MW}$$

Targets

The formula described above and shown for Los Angeles County is applied to each of the states' 58 counties. As shown in Table 1, there is wide variation in the County targets. Smaller and less urban counties tend to have lower targets than more urbanized counties. This reflects the decision to include consumption criteria. Participants at the Governor's Conference on Local Renewable Energy Resources suggested including consumption criteria to calculate the targets, so that distributed generation is located near load.

Unlike previous iterations to assign targets, this methodology is technology neutral. This approach is not based on assumptions about how many megawatts of a particular technology will be developed. This approach assumes that the market will choose technologies according to resource potential and consumer preferences.

This iteration assigns targets to individual counties. County specific targets align better with the local land use planning process than broader regional targets. Additionally, this analysis uses the county specific targets to identify targets for each utility. Utility targets represent the share of county targets in proportion to the utilities reported consumption in the Energy Commission database. For utilities that report consumption in two or more counties, the shares are aggregated to show the total utility target. As shown in Table 2, the three large investor-owned utilities (PG&E, SDG&E, and SCE) and LADWP account for 9,862megawatts, or 82 percent of the 12,000 megawatt goal.

Conclusion

As identified in the recommended strategies of the draft *Renewable Power in California: Status and Issues* report, an overarching strategy to achieve clean energy and job goals is to "identify and prioritize geographic areas in the state for…distributed generation development."Developing soft targets for allocating the Governor's goal of 12,000 megawatts of distributed generation is an important step towards achieving the renewable energy and jobs goals identified in the Clean Energy Jobs Plan.
This iteration of assigning soft targets is part of the Energy Commission's initial steps towards identifying areas for renewable distributed energy generation. The Energy Commission recognizes the important function that electric grid costs and reliability plays in achieving deployment of distributed generation goals. Albeit not perfect, using E3's preliminary assessment of grid capacity begins to control for grid costs and reliability. Further, using the 100% Learning Curve Least Net Cost Scenario aligns with the current High DG assumptions in the California ISO Transmission Planning Process.

Table 1: County Targets (in megawatts)

County Name	Target (MW)	County Name	Target (MW)	County Name	Target (MW)	County Name	Target (MW)
Alameda	466	Kings	60	Placer	121	Sierra	1
Alpine	4	Lake	24	Plumas	7	Siskiyou	16
Amador	16	Lassen	11	Riverside	620	Solano	137
Butte	85	Los Angeles	3,006	Sacramento	378	Sonoma	147
Calaveras	15	Madera	60	San Benito	14	Stanislaus	173
Colusa	15	Marin	67	San Bernardino	626	Sutter	38
Contra Costa	338	Mariposa	8	San Diego	906	Tehama	24
Del Norte	8	Mendocino	27	San Francisco	231	Trinity	4
El Dorado	58	Merced	129	San Joaquin	254	Tulare	170
Fresno	399	Modoc	4	San Luis Obispo	72	Tuolumne	20
Glenn	14	Mono	8	San Mateo	223	Ventura	260
Humbolt	42	Monterey	128	Santa Barbara	130	Yolo	79
Imperial	63	Napa	63	Santa Clara	636	Yuba	26
Inyo	5	Nevada	28	Santa Cruz	68		
Kern	455	Orange	948	Shasta	64		

Note: does not total to 12,000 due to rounding errors.

Table 2: Utility Targets (in megawatts)

Utility	Target (MW)
Alameda Power and Telecom, Bureau of Electricity	19
Anza Electric Cooperative, Inc.	2
Azusa Light & Water	11
Bear Valley Electric Service	4
Burbank Water & Power	53
Calaveras Public Power Agency	2
City of Anaheim	166
City of Banning	3
City of Biggs	1
City of Colton	16
City of Corona	3
City of Gridley	2
City of Healdsburg	4
City of Hercules	1
City of Lodi	17
City of Lompoc	6
City of Needles	1
City of Palo Alto, Resource Mgmt	-
City of Rancho Cucamonga	3
City of Redding, Finance Dept	34
City of Riverside, Public Utility Dept	91
City of Roseville	53
City of San Francisco	42

Utility	Target (MW)
City of Shasta Lake	7
City of Ukiah	5
City of Vernon	44
Department of Water Resources, State Water Project Analysis Office	280
Glendale Water & Power	52
Imperial Irrigation District	146
LADWP - Los Angeles Department of Water & Power	1,076
Lassen Municipal Utility District	4
Merced Irrigation District	16
Metropolitan Water District	104
Modesto Irrigation District	96
Moreno Valley Utility	4
Mountain Utilities	0
Pacific Gas & Electric Company	3,937
PacifiCorp	26
Pasadena Water and Power	56
Plumas-Sierra Rural Electric Cooperative	5
Port of Oakland	2
Port of Stockton	1
San Diego Gas & Electric Co. (SEMPRA)	973
Sierra Pacific Power Company	25
Silicon Valley Power	123
SMUD	366
Southern California Edison Company	3,876

Utility	Target (MW)
Surprise Valley Electrical Corporation	2
Truckee-Donner Public Utility District	3
Tuolumne County Public Power Agency	1
Turlock Irrigation District	75
USBR WAPA Central Valley Project	151
Valley Electric Association	1
Victorville Municipal	3
Grand Total	12,000

Note: does not total to 12,000 due to rounding errors.