

**TO:** SPSC DSM Work Group Participants  
**FROM:** Galen Barbose and Andy Satchwell (LBNL), Arne Olson (E3), and Lisa Schwartz (RAP)  
**DATE:** October 12, 2011  
**SUBJECT:** Follow-up items from October 10<sup>th</sup> DSM Work Group conference call

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In the course of the October 10<sup>th</sup> DSM Work Group conference call, several follow-up questions were posed for Work Group participants, which are summarized below. The purpose of this memo is to solicit feedback on these questions. We request input from DSM Work Group participants on the questions below (either in the form of an email or by returning this memo with your responses inserted below). Please forward your response to Galen Barbose ([gbarbose@lbl.gov](mailto:gbarbose@lbl.gov)) and Steve Ellenbecker ([sellenbecker@westgov.org](mailto:sellenbecker@westgov.org)), by next Tuesday, October 18<sup>th</sup>.

- (1) **DG resource levels for the Common Case.** LBNL, WIEB, and WECC staff developed projections of new DG capacity for the Common Case, based on the set of **existing** DG-related policies and programs previously vetted by the SPSC DSM Work Group as well as other DG capacity additions identified in utility IRPs. Table 1 below identifies the proposed DG capacity additions – and also, for reference, existing distributed PV capacity in each state. *Please review the draft DG resource levels summarized in Table 1, and let us know if you have any recommendations for modifying the amount of proposed new capacity.*
- (2) **EE Potential Studies.** The energy efficiency savings projections for the 10-year (2022) High DSM/DG case will be based on recent energy efficiency potential studies conducted for utilities or regions within the Western Interconnection (similar to the approach taken for last year’s High DSM case). *Please review the list of energy efficiency potential studies in Table 2, and let us know if there are any other recent EE potential studies in the west missing from the list.*
- (3) **DR Potential Assumptions for the High DSM/DG Case.** LBNL has proposed to update the state-level DR potential estimates contained in the 2009 FERC study, *A National Assessment of Demand Response Potential*, for the purpose of specifying DR resource levels in the High DSM/DG case. LBNL will likely be contracting with one of the firms that developed the original FERC study in order to update the potential estimates; however, guidance from SPSC DSM Work Group participants is needed in order to inform some of the underlying modeling assumptions. The FERC study specifies state-level DR potential estimates under a number of different scenarios. Last year, the “Achievable Potential” scenario was used for California, and the “Enhanced Business as Usual (BAU)” scenario was used for all other states and provinces. A similar approach may be taken this year, although an intermediate scenario between Enhanced BAU and Achievable Potential may be warranted for some states (e.g., those that have taken explicit steps towards deployment of advanced metering infrastructure).
  - a. *Assumptions about DR program enrollment and penetration.* The key input parameters for estimating state-level DR potential are: dynamic pricing enrollment,

percentage of enrolled customers accepting enabling technology, penetration of residential direct load control (DLC), and penetration of interruptible tariffs among C&I customers. Table 3 summarizes the values assumed in the *original* FERC study for each of these parameters, for both the Enhanced BAU and Achievable Potential scenarios. ***Please review that table, and let us know whether you have any recommendations for parameter values that would be most appropriate for your state(s), for the 2022 High DSM/DG case.***

- b. ***Advanced Metering Infrastructure (AMI) deployment.*** Another key value in developing state-level DR potential estimates is the percentage of installed AMI. The model uses this value to determine the amount of customers eligible to enroll in dynamic pricing programs and accept enabling technologies. ***Please provide information on AMI penetration levels today (or commitments over the next few years) in your jurisdiction as well as any guidance you can offer on an appropriate assumption for AMI penetration levels in 2022 under the High DSM/DG case.***

(4) **Methodology for Projecting DG Capacity in the High DSM/DG Case.** There are three follow-up questions related to the proposed methodology for developing estimates of DG capacity in the 10-year High DSM/DG case.

- a. ***Choice of technologies/applications to model.*** The DG definition adopted by the SPSC DSM Work Group is fairly broad and potentially includes any “small-scale installations located in such a way as to minimize the combined environmental footprint of generation and transmission.” The proposed DG methodology for the High DSM/DG case, however, focuses on three technologies/applications: rooftop PV, wholesale distributed PV connected to the utility-distribution system, and combined heat and power (CHP). The rationale for focusing on those three DG resource types is that they are the resources presumed to have the greatest potential, and there is more information available about resource potential for those DG resource types than for others. ***Please let us know if you feel strongly that other types of DG resources should be modeled for the High DSM/DG case, and if so, whether there are any studies or data that would be useful in developing those projections for your state(s) or province.***
- b. ***Extrapolation of PV Interconnection Potential from California to Other States/Provinces.*** The proposed methodology would take the updated estimate of PV “Interconnection Potential” for California, developed by E3 and Black & Veatch for the CPUC (soon-to-be public), and would extrapolate that estimate to other states, based on each state’s peak load and the coincidence between PV hourly production and hourly load. (Note that the provisional numbers for PV capacity additions in the High DSM/DG case presented on the Oct. 10<sup>th</sup> conference call were extrapolated in a different manner than described above; the projections for northwestern states will likely be lower when the extrapolation method defined above is used). ***Please let us know whether you have any major objections to this approach and, if so, whether there are alternatives that you would recommend and reasons why.***

- c. *Proposed DG Policy Goals*. One option for projecting DG capacity additions in the High DSM/DG case is to rely on “stretch goals” for specific DG technologies or for DG more broadly. ***Please let us know if you are aware of any specific policy targets for distributed PV, CHP, or any other DG technology that are being proposed by policy advocates in your jurisdiction.***

Table 1. Proposed DG Capacity in the WECC Common Case (MW)

State/ Province	PV		CHP (non-RE)		Other (RE)		Notes/Explanation
	Existing	New	Existing	New	Existing	New	
AB	0	0	no data	1,687	no data	0	Natural gas-fired cogeneration identified in 2011 AESO Long-term Transmission Plan
AZ	92	1,221	no data	0	no data	0	RPS DG set-aside assumed to be met entirely with PV
BC	no data	0	no data	11	no data	0	CHP identified in LTAP and 2011 LBNL follow-up survey
CA	920	4,402	no data	1,170	no data	0	PV equal to new CSI/NSHP (2302 MW, incl. IOUs & POUs), IOU wholesale distributed PV programs (1100 MW), RAM 2012 goal (1000 MW). New CHP equal to new supply-side and new demand-side CHP in CPUC LTPP projection for 33% Cost-Constrained case, for the year 2020.
CO	81	519	no data	0	no data	0	RPS DG set-aside assumed to be met entirely with PV
ID	0	0	no data	0	no data	0	
MT	1	0	no data	0	no data	0	
NM	11	44	no data	0	no data	0	RPS DG set-aside assumed to be met entirely with PV
NV	17	47	no data	6	no data	0	PV: regulatory schedule; CHP: Goodsprings Waste Heat Recovery facility
OR	22	88	no data	6	no data	135	New PV capacity equal to the sum of projected Energy Trust-funded systems (48 MW), behind-the-meter feed-in tariff systems (20 MW), and solar set-aside systems (20 MW). CHP (non-RE) is from PGE IRP. Other DG includes biomass-cogen in PACW and Eugene IRPs, plus Energy Trust projections of biomass and small wind capacity funded through open solicitations
UT	2	0	no data	0	no data	12	Biomass CHP resource addition identified in PACE IRP
WA	7	30	no data	0	no data	30	PV assumes continued additions at 2010 rate (2.5 MW/yr of behind-the-meter PV); CHP (biomass) resource addition identified in SCL IRP
WY	0	0	no data	0	no data	0	

Table 2. List of Recent Energy Efficiency Potential Studies for Utilities and Regions in the Western Interconnection

Region	Utility	Notes
Mountain	PSCo	KEMA. 2010. <i>Colorado DSM Market Potential Assessment: Final Report</i> . Prepared for Xcel Energy.
	Tri-State	Nexant. 2010. <i>System Wide Electric Energy Efficiency Potential Study</i>
	Colorado Springs	Summit Blue Consulting. 2010. <i>Colorado Springs Utilities Demand-Side Management Potential Study and Plans</i> .
	Alberta	Canadian Manufacturers and Exporters Association. 2010. <i>Improving Energy Efficiency for Alberta's Industrial and Manufacturing Sectors</i> .
Pacific Northwest	N/A (region-wide)	Northwest Power and Conservation Council. 2010. <i>6<sup>th</sup> Power Plan</i> .
	BC Hydro	Marbek & Associates. 2007. <i>BC Hydro 2007 Conservation Potential Review</i> .
	Idaho Power	Nexant. 2009. <i>Idaho Power Demand Side Management Potential Study</i> .
	Northwestern	Nexant. 2010. <i>NorthWestern Energy Assessment of Energy Efficiency Potentials (2010-2029)</i> .
	Pacific Power	Cadmus. 2011. <i>Assessment of Long-Term System-wide Potential for Demand-Side and Other Supplemental Resources</i> .
Southwest	Rocky Mountain Power	Cadmus. 2011. <i>Assessment of Long-Term System-wide Potential for Demand-Side and Other Supplemental Resources</i> .
	Arizona Public Service	ICF. 2007. <i>Arizona Public Service Energy Efficiency Potential Study</i> .
	Public Service New Mexico	Itron. 2006. <i>Public Service New Mexico Electric Energy Efficiency Potential Study</i> .
	Salt River Project	Cadmus. 2010. <i>Salt River Project 2012-2017 Energy Efficiency Plan, Final Report</i> .
California	Investor-owned utilities	California Energy Commission. 2010. <i>Incremental Impacts of Energy Efficiency Policy Initiatives Relative to the 2009 Integrated Energy Policy Report Adopted Demand Forecast</i> .
		Itron. 2008. <i>California Energy Efficiency Potential Study</i> .

**Table 3. Key Input Parameters for DR Potential Estimates**

	<b>Dynamic Pricing Enrollment</b>	<b>Customers Accepting Enabling Technology</b>	<b>Penetration of Residential DLC</b>	<b>Penetration of C&amp;I Interruptible Tariffs</b>
<b>Expanded BAU</b>	5% (Voluntary)	0%	25%	16-25% (Large C&I)
<b>Achievable Participation</b>	60-75% (Default)	60%	25%	16-25% (Large C&I)