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SCE's Comments on CEC Docket 16-IEPR-05: Joint Agency IEPR Workshop on Demand Forecast and Doubling Energy Efficiency – Data and Analytical Needs

Additional submitted attachment is included below.

July 25, 2016

California Energy Commission
Docket Office, MS-4
Re: Docket No. 16-IEPR-05
1516 Ninth Street
Sacramento, CA 95814-5512
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Re: Southern California Edison Company's Comments on the California Energy Commission Docket No. 16-IEPR-05: Joint Agency IEPR Workshop on Demand Forecast and Doubling Energy Efficiency – Data and Analytical Needs

Dear Commissioners:

On July 11, 2016, the California Energy Commission (Energy Commission), and the California Public Utilities Commission (CPUC) held a Joint Agency Workshop ("Workshop") to discuss existing and emerging analytical data, tools, and approaches that could assist in establishing energy efficiency (EE) targets, evaluating energy savings, and integrating such data into the energy demand forecast as part of future Integrated Energy Policy Report (IEPR) proceedings. Southern California Edison (SCE) participated in the Workshop and appreciates the opportunity to provide these written comments.

In these comments, SCE sets forth its key recommendations to the Joint Agencies for consideration, including the expanding long-term planning to include distribution planning proceedings and prioritizing long-term forecasting and planning activities. SCE also expands on its responses to questions posed during its Panel Discussion on "Perspectives on Establishing Energy Efficiency Targets and Evaluating Energy Savings" to provide further information and guidance to the Joint Agencies and stakeholders on strategies to improve measurement, evaluation, and verification of EE in demand forecasting.

A. Agencies Should Coordinate on Long-Term Planning Efforts, Including Emerging Distribution Planning Proceedings

As noted during the Workshop, SCE strongly urges agencies to coordinate on various long-term planning efforts. Though the Energy Commission's Demand Forecast is already being used to inform the CPUC's Long Term Procurement Process (LTPP) and the California Independent System Operator's (CAISO) Transmission Planning Process (TPP), in light of the many new proceedings and distribution planning efforts that have emerged in recent years, agencies should expand such coordinated efforts. For example, the CPUC's Distribution Resources Planning (DRP) proceeding, the Integrated Distributed Energy Resources (IDER)

proceeding, and the Integrated Resources Planning (IRP) proceeding would benefit greatly from information gleaned through the Energy Commission's Demand Forecast if data could be disaggregated at a more local level.

B. The Energy Commission and Agencies Should Coordinate to Prioritize and Align EE Issues Impacting Long-Term Demand Forecasting and Planning

During the Workshop, stakeholders discussed a number of EE-related regulatory proceedings, programs and efforts, which span across multiple regulatory agencies. Due to the prevalence of EE in various forums and proceedings, it is important for agencies to: (1) work together to prioritize efforts, (2) ensure that various EE efforts are consistent with one another, and (3) make decisions in a timely manner. With respect to prioritizing, SCE recommends that the Energy Commission and agencies focus primarily on EE issues that have a direct impact on long-term demand forecasting and ongoing planning activities, in keeping with the objectives of the Workshop.

Additionally, in the context of EE and aligning planning and demand forecasting efforts, SCE recommends using a holistic approach that defines terms, processes, and procedures consistently among proceedings with a strong consideration of the new IRP environment. Specifically, SCE recommends:

- **Coordinating cross-cutting policy issues to provide clear and consistent direction for future forecasting and planning activities.** For example, developing and defining “cost effectiveness” consistently across EE programs, load forecasts, integrated resource planning, and power procurement activities would provide a good foundation for future planning activities. Currently, EE programs use Total Resource Cost (TRC) and Program Administration Cost (PAC) tests while Power Procurement activities use a \$/MWh or \$/MW threshold. It is important for the Energy Commission to work with other agencies to develop a consistent way to define cost effectiveness and apply the same definition to different proceedings, especially with consideration of the future IRP framework.
- **Measuring grid impact from EE programs to be consistent with the definition of “peak demand.”** As parties pointed out during the Workshop, the hour of peak demand is expected to shift to later hours in the future—particularly due to the influx of solar energy on the electric grid during day-time hours. To account for these changes, future grid level impact for EE programs should also build in consideration of the peak hour shift effect.
- **Revisiting changes to program process and procedures.** For example, fuel switching and retro commissioning need to be revisited with the new decisions.
- **Avoiding the use of “net savings” as a methodology for EE.** SCE and other utilities have previously noted problems with reverting to net goals, because they fail to recognize the full impact of EE on the grid, while also creating inconsistent applications of net-to-gross ratios among the Energy Commission and CPUC planning processes.

C. Responses to Panel Questions

In addition to SCE's overarching recommendations on demand forecasting efforts noted above, SCE would like to expand on its responses to questions posed during the Workshop's third panel discussion to clarify and inform parties of SCE's efforts with regard to energy efficiency targets and evaluation of energy savings:

1. ***Briefly describe the process for evaluating the impacts of current and future efficiency programs for your forecasts. How are these estimates transferred to utility planners/forecasters? Are codes and standards evaluated in addition to programs?***
 - SCE uses Evaluation, Measurement and Verification (EM&V) results to adjust EE Potential and Goal model inputs (e.g., Measure Savings, Low Income Savings, Net to Gross ratios, measure costs, Ex Ante/Ex Post program savings/model calibration, etc.)
 - In the EE Potential and Goals model, Codes and Standards (C&S) impacts are estimated and forecasted into the future. When a measure becomes a code or standard, that measure is removed from "achievable potential" and savings are placed into C&S, thus assuring homogenous savings from both achievable potential (EE Program Goals) and C&S (C&S Program Goals). C&S Program savings are evaluated in addition to standard incentive programs.
2. ***What metrics would you like to see for setting efficiency targets related to SB 350: Absolute amount of kWh and therm savings? Reductions in consumption or consumption per capita of each? Overall reduction in GHG? Changes in energy intensity?***
 - At this time, SCE is still assessing the best metric to use; and in fact, several metrics may be needed to best capture benefits associated with EE that would show the value of overall energy reduction, greenhouse gas (GHG) reduction, locational grid benefits, and offsetting the need for generation (both fossil fuel and renewable based) via EE programs.

Metric	Pros	Cons
kWh and Therms	<ul style="list-style-type: none"> • A simple metric that is already in use • Aligns with SB 350's energy-based goal • Directly captures the value of deferring utility –scale renewables or DG 	<ul style="list-style-type: none"> • Does not directly align with the state's GHG goal • Does not directly align with locational targeting & grid benefits
Reductions in consumption or consumption per capita	<ul style="list-style-type: none"> • Aligns with SB 350's energy-based goal 	<ul style="list-style-type: none"> • May make evaluation and tracking of goals more complex (i.e. business as usual savings AND incremental savings)

Metric	Pros	Cons
	<ul style="list-style-type: none"> May help better capture the incremental savings associated with SB 350 	<ul style="list-style-type: none"> Does not directly align with the state's GHG goal
Overall GHG reduction	<ul style="list-style-type: none"> Aligns with state's 2050 GHG goal Align with other GHG reduction activities such as electric transportation 	<ul style="list-style-type: none"> Does not directly align with SB 350's energy-based goal Does not adequately capture the value associated with deferring utility –scale renewables or DG
Changes in energy intensity	<ul style="list-style-type: none"> Can be a good metric for individual buildings as AB 802 benchmarking matures, coupled with normalization (occupancy and weather) 	<ul style="list-style-type: none"> Relies on incomplete or inaccurate assessor data Simply adds an additional, unnecessary variable for grid-level planning purposes Does not directly align with the state's GHG goal
MW (not listed)	<ul style="list-style-type: none"> A simple metric that is already in use Aligns with locational targeting & grid benefits Directly captures the value of deferring utility –scale renewables or DG 	<ul style="list-style-type: none"> Does not directly align with SB 350's energy savings goals Does not directly align with the state's GHG goal

3. Have you begun or do you plan to use Advanced Metering Infrastructure (AMI) data to evaluate efficiency program accomplishments? If so, what sort of techniques have you considered to tease out the impacts from efficiency programs?

Present

- SCE currently performs *ex post* evaluations using AMI data coupled with program participation data to tease out the associated savings from incentive programs. For example, SCE uses AMI data in support of behavior-based programs and income qualified energy assistance programs. SCE has successfully tested AMI based savings analysis for residential Heating, Ventilation and Air Conditioning (HVAC) program.

Pilots (pending)

- SCE will submit High Opportunity Projects or Programs (HOPPs) proposals in late July 2016 that will utilize AMI data for EM&V in the following key areas:
 - Public-building retro-commissioning focused on a sub-class of pre-1978 building stock;
 - Comprehensive HVAC Value Chain focused on combinations of commercial HVAC activity (equipment replacement, quality installation, quality maintenance) to identify a more holistic program implementation coupled with an AMI-based savings approach;

- On-Bill Financing program update that allows for loans (using projection models) and savings (using AMI data) inclusive of to-code activity.
- For 2016-2017, SCE also plans to determine whether applying AMI-based approaches to calculate savings for pump services, strategic energy management, controls, commercial HVAC, and pool pump activity may be viable.
- SCE is evaluating various targeting analytics tools for identifying ideal candidates for AMI-based savings approaches.

Future

- To help program redesign beyond 2017, SCE is exploring the role of predictive analytics to forecast savings at a project level within acceptable parameters for individual customer incentive calculations and/or broader energy demand forecasting.
- As building retrofits become more comprehensive and complex, SCE will explore using more granular AMI data coupled with statistical approaches to measure efficiency changes and verify savings. Additional sub-metering could also be used to enhance the process in more complex situations.
- It should be noted that while billing data based methods for evaluating energy efficiency savings is not new, the use of more granular AMI-based savings for complex retrofits is still relatively new, and the pilots that are being conducted will help further advancements in AMI-based savings approach.

4. What additional tools and data, including surveys, might be useful for evaluating actual efficiency savings?

- Program participation data coupled with AMI-based approaches that use tools such as remote audits and load disaggregation could be used for this purpose.
- Tools that provide telemetry information for demand response applications to diagnose actual loads on the grid could also be leveraged to estimate energy efficiency savings.
- Surveys could also be used to refine the estimated savings that was based upon AMI data to provide a higher level of accuracy.

In conclusion, SCE appreciates the state agencies' consideration of these comments and looks forward to its continuing collaboration with the Energy Commission and stakeholders. Please do not hesitate to contact me at (916) 441-3979 with any questions or concerns you may have. I am available to discuss these matters further at your convenience.

Very truly yours,

/s/ Catherine Hackney

Catherine Hackney