BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking Concerning Energy Efficiency Rolling Portfolios, Policies, Programs, Evaluation, and Related Issues.	Rulemaking 13-11-005

INFORMAL COMMENTS OF THE COUNTY OF LOS ANGELES, ON BEHALF OF THE SOUTHERN CALIFORNIA REGIONAL ENERGY NETWORK (CPUC #940), ON EXISTING CONDITIONS BASELINES POLICY PER AB 802

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For the Southern California Regional Energy Network

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I. Introduction

At the request of California Public Utilities Commission ("Commission") and the Staff following the Existing Conditions Baselines Savings Potential Technical Analysis Public Workshop on November 6, 2015, the County of Los Angeles, on behalf of the Southern California Regional Energy Network ("SoCalREN"), submits these Comments. This Workshop focused on the Commission's approach to existing conditions baseline policy per AB 802 (Williams), and the technical issues that must be considered in its implementation.

The SoCalREN recommends the Commission and Staff adopt a premise-based existing condition baseline policy to adhere to AB 802 mandates and to enable new program designs that deliver reliable and persistent energy savings. Our comments focus on:

- A premise-based existing condition baseline as a critical element to:
  - Support AB 802 mandates;
  - Determine optimal deployment of energy efficiency to provide greatest benefits;
  - Align energy efficiency program efforts with actual impacts seen by the customer.
- Commission Staff concerns about transitioning to existing baseline conditions.

II. General Comments

A. Support of AB 802 Mandates

On October 8, 2015, Governor Brown signed AB 802, which directs the Commission to authorize programs that bring existing buildings into conformity

with or enable them to exceed the requirements of Title 24 regulations[1]. The SoCalREN believes that compliance with AB 802 mandates requires a premise-based existing conditions baseline, i.e. a baseline based on a building's normalized metered energy consumption (NMEC) data aggregated on a monthly basis. Based on this view, the SoCalREN finds the proposed Staff approach presented during the November 6, 2015, workshop to be inconsistent with the intent and requirements of AB 802 as follows:

- Using a measure-based (i.e. equipment-based) existing conditions baseline to inform the Potential and Goals Studies[2] ("Studies") would be inconsistent with the intent of AB 802 to use aggregated NMEC data;

- Using a "bottom up" measure-based analysis framework for the Potential and Goals Model[3] would be inconsistent with AB 802's requirement that analysis be based on building aggregate NMEC data;

- Defining the "existing condition baseline" as a market average that requires a discrete energy savings value for each measure[4] is inconsistent with AB 802 as it is not based on NMEC data collected over a designated period, such as 12-months;

- Using the existing code baseline to account for natural turnover is both unnecessary and inconsistent with AB 802. Twelve months of NMEC data for participating buildings would accurately capture the complete energy usage profile of a building including all installed equipment, occupant usage behaviors and energy performance of the building envelope.

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[1] Assembly Bill (AB) 802, Section 6, lines 33 – 35.
[2] CPUC presentation slides at the Public Workshop on November 6, 2015, on Existing Conditions Baseline Saving Potential Technical Analysis, slide # 14.
[3] Navigant Energy presentation slides at the Public Workshop on November 6, 2015 on Existing Conditions Baseline Saving Potential Technical Analysis, slide # 4.
[4] Navigant Energy presentation slides at the Public Workshop on November 6, 2015 on Existing Conditions Baseline Saving Potential Technical Analysis, slide # 6.

In summary, the Staff proposal to use a measures-based existing conditions baseline established using potentially arbitrary estimates does not align with the requirements of AB 802 to use actual normalized metered energy consumption data from participating buildings. The SoCalREN urges Staff to re-design its proposed existing conditions baseline policy to be consistent with AB-802 mandates.

B. Determine Optimal Deployment of Energy Efficiency to Provide Greatest Benefits

The SoCalREN views a building's existing condition energy profile as providing an important linkage to how the building might impact local grid operations. By aggregating the energy profiles of multiple buildings on a local grid, the grid operator could evaluate this information in conjunction with data on the local system's capacity. This information can assist in the determination of locational and temporal premiums for energy efficiency deployment. The premise-based existing condition baseline established using a building's metered energy use data, therefore, provides a solid foundation for improved energy efficiency planning and implementation. The SoCalREN strongly encourages Staff to leverage the AB 802 mandates through adoption of a meter-based policy framework that enables programs to deliver more reliable and cost-effective energy efficiency resources for system planning and procurement.

C. Align Energy Efficiency Program Efforts to Actual Impacts Seen by the Customer

Customers typically define savings as the difference between their metered usage before an energy project compared to the metered usage after the project, not what a hypothetical calculation says should have happened. This customer perspective is also consistent with what the grid sees, i.e. the program impacts on the local grid are the aggregation of actual metered impacts across all project sites and not the project impacts above a theoretical code baseline.

The SoCalREN believes that policy and program design must support both customer and grid needs. Therefore, we recommend policy and program designs that align with what customers and the grid logically want to see by using the building existing conditions as the baseline.

D. Staff Concern about Transitioning to Existing Conditions Baseline

At the workshop, Staff raised three main concerns[5]:

- How to design appropriate incentives so that a program does not pay for actions that a customer would have taken regardless?
- How does the Commission manage ratepayer funds judiciously?
- How will the new paradigm for existing condition baseline impact budget authorizations?

The SoCalREN sees the first two concerns as the same; how to invest ratepayer funds prudently without spending on activities that would have happened anyway. The SoCalREN applauds Commission Staff's diligent efforts in protecting ratepayer interests. However, the SoCalREN also encourages Commission Staff to embrace their core mission to move markets to action to deliver reliable and persistent energy savings. Program outcomes can be reliably evaluated based on 12-months of NMEC pre-project data along with 12 to 36-months of NMEC post-project data. The critical question for Staff in evaluating whether the program was fundamentally successful is "did the program deliver significant and persistent savings?" Attempts to hypothetically attribute program impacts to specific activities can distract Staff from strategic efforts to attain the key target outcomes of reliable, enduring and cost-effective savings.

[5] CPUC presentation slides at the Public Workshop on November 6, 2015 on Existing Conditions Baseline Saving Potential Technical Analysis, slide # 4.

III. Specific Questions from the Workshop

1. ***How will IOU program incentives and budgets change now that savings below code can be valued?***

The SoCalREN is confident that studies currently in process will conclude that the "to code" savings potential of existing buildings is very significant. Given this assumption, the energy efficiency portfolio budgets for Program Administrators will need to be significantly increased. As energy efficiency is first in the loading order, the SoCalREN recommends that the Commission continue its current practice of setting portfolio budgets and incentive levels based on the cost-effectiveness of energy efficiency compared to competing alternatives, including all supply-side resources.

2. ***Are there data sources the Navigant team is not currently leveraging that can provide information on existing conditions baselines?***

The SoCalREN recommends the following data sources for the Navigant team to leverage:

a. UCLA Energy Atlas (http://www.energyatlas.ucla.edu/) - An interactive web-based information portal that describes and assesses building energy use across Los Angeles County using monthly customer-level energy consumption by land use type, rate class, and climate zone. This analysis also incorporates socio-demographic data and individual building characteristics.

b. DOE Building Performance Database (https://bpd.lbl.gov/#explore) - The nation's largest dataset of information about the energy-related characteristics of commercial and residential buildings. The website allows users to explore the data across real estate sectors and regions and compare various physical and operational characteristics to gain a better understanding of market conditions and trends in energy performance.

Over the longer term, the SoCalREN recommends the Commission mandate programs to collect appropriate data from all buildings participating in any Demand-side Management ("DSM") program. Appendix A provides an example of a dataset that could be collected to establish a completed picture of buildings both pre- and post-project implementation. This recommended dataset also supports building rating, benchmarking, labeling and disclosure requirements, which are critical steps toward transforming the existing building stock into high-performance energy assets.

3. ***Which measure types are "repair eligible" (i.e. customers can extend the life of existing equipment with low-cost repairs if it fails)?***

There are numerous equipment types that are "repair eligible". For example: pool pumps, central HVAC systems, walk-in refrigeration units, boilers, etc.

However, the SoCalREN is concerned with the program path that this question leads to, along with the Staff Whitepaper on HOPPs, which suggests the adoption of a measure-based evaluation protocol. A measure-based evaluation protocol attempts to attribute impacts from individual energy efficiency actions or equipment. This evaluation approach is essentially based on the current ex-ante DEER framework, which is unreliable and is highly cumbersome, complex and contentious[6] for program evaluation.

The SoCalREN believes the ex-ante DEER framework can be valuable for program planning. The estimated saving potentials for equipment and energy efficiency actions allow Program Administrators and Program Implementers to conduct a bottom-up planning analysis for their programs. However, using the ex-ante DEER framework for evaluating actual program impacts has created significant barriers for attaining accurate and reliable savings data from energy

[6] D.12-05-015, "DEER has become contentious and convoluted", pages 7, 25 and 321-324.

efficiency programs.

The SoCalREN strongly recommends against adopting an ex-ante DEER framework for program impact evaluation and goal setting for the following reasons:

- The measure-based evaluation approach has led to portfolios that are inflexible in responding to market dynamics. Per the Joint Parties proposal to streamline the existing ex-ante process for the Rolling Portfolio post-2015, the new proposed process still requires a 12-month review, approval and adoption timeline for ex-ante DEER values[7]. The slowness of the ex-ante DEER process simply cannot keep up with dynamic markets where typical product life cycles are only 9 to 12 months.;

- Program implementation gets bogged down in complex and restrictive engineering estimates that do not reflect how a customer decides to install energy efficient equipment or how they use energy;

- Inefficiencies and ineffective program planning and implementation can be caused by frequent after-the-fact changes and an often contentious relationship between the Commission Staff and Program Administrators[8] related to the ex-ante DEER evaluation processes.

As an alternative to the Staff's proposed measure-based evaluation approach, the SoCalREN recommends adopting a data framework consistent with AB 802 that uses normalized metered energy consumption data at the individual building-level for program evaluation.

[7] D.15-10-028, Finding of Facts # 19, page 119.
[8] D.12-05-015, "DEER have become contentious and convoluted", pages 7, 25, 321-324.

4. ***Is there any data documenting the cost to a consumer to repair equipment vs. replace with new equipment?***

The SoCalREN is not aware of any comprehensive, reliable and empirically-based data currently available that document the cost of repair versus replacement with new equipment.

IV. Conclusion

The SoCalREN appreciates the Commission's and Staff's expeditious efforts to implement the provisions of AB 802. The SoCalREN strongly supports adopting premise-based existing condition baselines as a critically important step toward a new generation of program designs that will not only align energy efficiency program efforts more closely with actual customer impacts but will also support optimal deployment of energy efficiency to provide the greatest benefits to both customers and the grid.

November 25, 2015

Respectfully Submitted,

COUNTY OF LOS ANGELES AND
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Appendix A
Illustrative Example of Project Data Set

Information Type	Project Application	Post Evaluation
General Building Information	Facility Name	Confirm still true
	Data Collected By	Confirm still true
	Date of Data Collection	Confirm still true
	Site Address	Confirm still true
	Building Type	Confirm still true
	Site Contact Name	Confirm still true
	Site Contact Phone	Confirm still true
	Site Contact Email	Confirm still true
	Sustainability/Energy Staff Roles and Contacts	Confirm still true
	Conditioned Floor Area	Confirm still true
	Total Unconditioned Floor Area	Confirm still true
	Total Project Outdoor Space	Confirm still true
	Year Built / Year Completed	Year Retrofit Completed
	Building Orientation	Confirm still true
	Number of Total Floors	Confirm still true
	Available Solar Area (m^2) (optional)	update with the remaining area
	Window to Wall Ratio	update
Resource Data	Electric Rate/Tariff	Disclose with appropriate entity(ies)
	IOU SA# (Service Account #)	Disclose with appropriate entity(ies)
	IOU Meter Number	Disclose with appropriate entity(ies)
	Smart Meter Model	Confirm still true
	12 months of kWh consumption	Hourly GreenButton Data
	12 months of kW demand	Hourly GreenButton Data
	Annual Electric Costs by Volumetric Charges, by Demand Charges, by fees	Hourly GreenButton Data
	Annual Electric Costs by Volumetric Charges, by Demand Charges, by fees	Hourly GreenButton Data
	Gas Rate/Tariff	Disclose with appropriate entity(ies)
	Gas Meter #	Disclose with appropriate entity(ies)
	12 months of therm consumption	Hourly GreenButton Data (if available)
	Annual therm Costs by Volumetric Charges, by fees	Hourly GreenButton Data (if available)
	Water Meter Number	Disclose with appropriate entity(ies)
		Disclose with appropriate entity(ies)
	General Building Information	Disclose with appropriate entity(ies)
		3 Years of Post-Retrofit AMY data

Information Type	Project Application	Post Evaluation
Construction Properties	Roof Type	Document any measure-level changes
	Floor Type	Document any measure-level changes
	Wall Type	Document any measure-level changes
	Window Framing Type	Document any measure-level changes
	Window Glass Type	Document any measure-level changes
Lighting	Interior Lighting Type	Document any measure-level changes
	Controls	Document any measure-level changes
	LPD	Document any measure-level changes
	Exterior Lighting	Document any measure-level changes
HVAC	Distribution Equipment (Central or Zone)	Document any measure-level changes
	Cooling Source	Document any measure-level changes
	Equipment	Document any measure-level changes
	Cooling Plant Type (if applicable)	Document any measure-level changes
	Chiller Compressor Type (if applicable)	Document any measure-level changes
	Chiller Condenser Type (if applicable)	Document any measure-level changes
	Heating Source	Document any measure-level changes
	Equipment	Document any measure-level changes
	Heating Plant Type (if applicable)	Document any measure-level changes
	Boiler Fuel Type (if applicable)	Document any measure-level changes
	Boiler Draft Type (if applicable)	Document any measure-level changes
	Fan Control	Document any measure-level changes
	Distribution	Document any measure-level changes
Service Hot Water	Fuel Type	Document any measure-level changes
	Equipment	Document any measure-level changes
	Efficiency	Document any measure-level changes
Building Operations	Occupancy type - owner/renter	Confirm still true
	Lease Type (for Utility Bill)	Confirm still true
	Planned Upgrades	update
	Operating Hours and Schedule - Occupancy	Document any measure-level changes
	Operating Hours and Schedule - HVAC	Document any measure-level changes
	Installed DER Technologies and capacities	Document any measure-level changes
	EE Program Participation Data	Document any measure-level changes
	Set-point Heating	Document any measure-level changes

Information Type	Project Application	Post Evaluation
	Set-point Cooling	Document any measure-level changes
Baseline Reporting	End Use Breakdown (min, HVAC, Lighting, Plug Load)	Per .xml output file
	Modeling of energy consumption calibrated to ASHRAE Guideline 14	Per .xml output file
	Site EUI Baseline	Site EUI Year *i*
	Source EUI Baseline	Source EUI Year *i*
	Effective Electricity Cost/unit energy	Effective Electricity Cost / unit energy - Year *i*
	Effective Therms Cost/unit energy	Effective Therms Cost / unit energy - Year *i*
	Measure level UPM Plan	Executed Uniform Method Project Plan
	Program level EM&V Plan	Executed EM&V Plan
Program Participation Reporting	n/a	Measure Attributes
	n/a	Non-program-intervention upgrades/changes
	n/a	Measure Cost
	n/a	Retrofit Total Cost
	n/a	Total Program Cost
	n/a	EUL of measures
	n/a	RUL of removed equipment
	n/a	Equipment - Labor - Material cost per measure