COMMENTS OF THE OFFICE OF RATEPAYER ADVOCATES ON IMPLEMENTATION OF ASSEMBLY BILL 802, NORMALIZED METERED ENERGY CONSUMPTION, AND EXISTING CONDITIONS BASELINES

February 10, 2016

(Submitted to Energy Division Staff)

I. INTRODUCTION

The Office of Ratepayer Advocates (ORA) submits these comments addressing the questions raised by Energy Division Staff (Staff) as part of the Commission's January 26-27, 2016 workshops on the implementation of Assembly Bill (AB) 802, normalized metered energy consumption (NMEC) measurement techniques, and energy efficiency (EE) baselines. ORA's comments include a section focused on AB 802 implementation and EE baseline determination, followed by sections that mirror the workshop agendas and Staff questions to the greatest extent possible. In the comments ORA makes the following recommendations:

- The Commission should revise the guidance to PAs in the HOPPs ruling and future AB 802 implementation guidance to be consistent with the full text of PU Code § 381.2(b) and only allow HOPPs that rely on NMEC as the principal measure of energy savings.
- Deemed and calculated savings approaches should not be included in AB 802 programs and projects and instead limit the use of such approaches to programs and projects in the existing EE portfolios.
- The Commission should continue to consider relevant appliance and equipment standards in determining the most reasonable baseline to apply in measuring energy savings, inclusive of AB 802 programs and projects.
- The assumption that existing conditions should be used as the baseline should be applied narrowly to those sectors and segments where strong evidence supports the calculation that little or no investment in EE is likely to happen without ratepayer investment.
- The Commission should adjust Codes and Standards program goals and budgets for future cycles to account for any reductions in potential due to expanded use of existing conditions baselines.
- The Commission should require the use of comparison or control groups to determine

savings attributable to AB 802 programs whenever feasible.

- The Commission should follow national best practice for determining the appropriate energy efficiency baseline. Staff should review current baseline practice and consider revisions in cases where U.S. Environmental Protection Agency Clean Power Plan guidance and current Commission policy diverge.
- The Commission should only adopt new baseline policies in those cases in which parties can demonstrate based on compelling evidence that an alternative baseline embodies a more reasonable set of assumptions than current practice.
- Program Administrators and Staff should review existing research, in particular the 2010-2012 Commercial Saturation Survey, in order to carefully target existing baselines programs and avoid widespread duplication or free-ridership.

II. OVERARCHING CONCERNS ON AB 802 IMPLEMENTATION AND BASELINE DETERMINATION

A. AB 802 Requires the Use of Normalized Metered Energy Consumption for Energy Savings Quantification

On December 30, 2015 the Commission adopted the Joint Assigned Commissioner and Administrative Law Judge Ruling (HOPPs Ruling), which set forth standards and a review process for "high opportunity programs or projects" (HOPPs)[1] as a first step in implementing the provisions of AB 802.[2] The Ruling may be inconsistent with the statute because it allows metrics other than NMEC as specified in AB 802.

The full text of the PU Code § 381.2(b) includes an introductory clause that explains that the use of NMEC is needed "to determine how to incorporate meter-based performance into determinations of goals, portfolio cost-effectiveness, and authorized budgets." Projects or programs that do not use meter-based savings estimates do not advance the legislative mandate to determine how to incorporate meter-based performance into EE portfolios. The HOPPs ruling considers only the part of PU Code § 381.2(b) related to "taking into consideration the overall reduction in normalized metered energy consumption as a measure of energy savings," and not the specific directive in the statute to incorporate meter-based performance.

[1] *Assigned Commissioner and Administrative Law Judge's Ruling Regarding High Opportunity Energy Efficiency Programs or Projects*, issued Dec. 30, 2015, p. 2.
[2] AB 802 (Williams, 2015), Section 6, codified as Public Utilities Code (PU Code) Sections 381.2(a)-(f).

The Commission should revise the guidance to PAs in the HOPPs ruling to be consistent with the full text of PU Code § 381.2(b) and only allow high opportunity projects and programs that rely on NMEC as the principal measure of energy savings.

B. Deemed and Calculated Savings Approaches Should Not Be Included in AB 802 Programs

The HOPPs Ruling allowed Program Administrators (PAs) to submit programs and projects that use either NMEC energy savings measurement techniques or deemed savings estimates. An earlier Staff White Paper[3] interpreted AB 802 as requiring the use of NMEC savings estimates for all HOPPs. The HOPPs Ruling offers no explanation for the inclusion of deemed savings approaches beyond the receipt of party comments.[4] The inclusion of deemed savings approaches in the implementation of AB 802 would be contrary to the statute.

The inclusion of deemed measures in HOPPs and AB 802 implementation increases the risks on nonperformance borne by the ratepayers. Deemed (and calculated) savings estimates are based on ex ante engineering estimates and do not utilize normalized meter data to determine an appropriate baseline energy consumption for each installation as do NMEC approaches. The use of deemed savings estimates based on an existing conditions baseline would substantially increase the risk of paying incentives to customers who would have installed the measure anyway (i.e. free-ridership) without requiring the metering and normalization needed to determine whether the intervention was in fact additional and added incremental savings. Current Commission policy deals with this risk to ratepayers by setting the default baseline at code for most deemed measures and requiring PAs to show a preponderance of evidence that the program influenced early retirement of a measure in order to claim the additional increment of savings from existing conditions to code, followed by ex post third party verification of PA savings claims. This policy is both prudent and reasonable as a set of minimum ratepayer protection.

Given the lack of statutory support and the substantial increase in risk ratepayer would bear, ORA recommends that the Commission limit the use of deemed and calculated savings estimates approaches to approved programs and projects in the existing portfolio.

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[3] CPUC Staff, *Proposed Framework for AB 802 High Opportunity Projects and Programs*, issued via ALJ Ruling, November 4, 2015.
[4] HOPPs Ruling, p. 8.

C. Title 24 Cannot Be Used as an AB 802 Programs Baseline, but the Commission Should Continue to Consider Title 20 and Federal Standards in Determining AB 802 Program Baselines

The HOPPs Ruling includes a discussion of the appropriate baseline for "replace on burnout" measures, ultimately limiting their inclusion in HOPPs to cases in which there is supporting information to substantiate that a particular class of equipment is being "repaired indefinitely" and thus the use of existing conditions as the baseline is justified.[5] The HOPPs Ruling also notes that the question of which baseline to apply to replace on burnout measures will be addressed in the Commission's full decision on AB 802 implementation.[6] PU Code § 381.2(b) is clear that AB 802 programs and projects "shall include energy usage reductions resulting from the adoption of a measure or installation of equipment required for modifications to existing buildings to bring them into conformity with, or exceed, the requirements of Title 24 of the California Code of Regulations."[7] In other words, AB 802 programs and projects should not use Title 24 building code requirements in determining the appropriate baseline for energy savings. However, since the legislation is silent on other codes and standards in some situations it may still be appropriate to relevant codes and standards in setting baselines.[8]

Many of the measures currently classified as replace on burnout measures that might be "repaired indefinitely" such as the boilers cited in the HOPPs Ruling[9] are subject not only to Title 24 standards but to minimum appliance efficiency standards under Title 20 of the California Code of Regulations as well as federal appliance and equipment standards. PU Code § 381.2(b) is silent on whether state and federal codes and standards outside of Title 24 are relevant to baseline determination in AB 802 programs. Given that (a) Title 24 is specifically named in the legislation, (b) Title 24 is focused on building standards rather than appliances or equipment, and (c) all of AB 802 is focused on increasing the efficiency of existing buildings, a reasonable

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[5] HOPPs Ruling, pp. 16-17.
[6] HOPPs Ruling, p. 17.
[7] PU Code § 381.2(b)
[8] When the statutory language is clear and unambiguous on its face, interpretation of the statute should be restricted to the language of the statute. Extrinsic information on intent is unnecessary. The statute must not be extended to anything it does not mention explicitly. *Sacramento v. Public Employees' Retirement System* (1994) 22 C.A.4th 786, 793; *Ceridian Corp. v. Franchise Tax Bd.* (2000) 85 C.A.4th 875, 889.

[9] See also: comments of NRDC and Greenlining Institute, p. 6 and the comments of Pacific Gas & Electric, p. 6.

interpretation is that the legislature did not intend to preclude consideration of Title 20 and Federal Standards in baseline determination for covered appliances and equipment, either in AB 802 programs or in the wider EE portfolio.

ORA recommends that the Commission continue to follow its current policy of including consideration of relevant appliance and equipment standards in determining the most reasonable baseline to apply in measuring energy savings, inclusive of AB 802 programs and projects.

D. Existing Conditions Baselines Should Be Reserved for Sectors and Segments Where Strong Evidence Indicates that Little or No Investment in EE is Likely to Happen Without Ratepayer Support

Parties at the workshop seemed to confound the energy savings accounting issue of determining appropriate EE baselines with the policy goal of finding and incentivizing stranded EE savings. The assumption seems to be that by changing EE baselines to existing conditions and incentivizing all savings from existing conditions, PAs will finally be able to tap into EE that had been stranded by too stringent codes, a lack of funds to update basic building infrastructure, or a short-term economic calculus to repair old equipment when longer-term energy savings would dictate replacement.

Parties' conflation of an energy savings accounting question (where to set the baselines) with the strategic question of how to access stranded savings is inaccurate and inappropriate. It is inaccurate because it requires an assumption that all achievable EE is essentially stranded and requires some kind of ratepayer incentive to be realized, when in fact much EE will occur naturally through turnover[10] in the market aided by the development of more stringent energy codes and standards.[11] It is inappropriate because indiscriminately changing baselines in an effort to mobilize "stranded" EE could divert scarce resources towards subsidizing EE that would have already happened and away from investments in incremental above-code efficiency that would not happen absent ratepayer intervention.

ORA supports a more discriminate approach to baselines. In energy terms, the definition

[10] Navigant stated in the January 26, 2016 workshop that naturally-occurring EE in existing buildings conservatively accounted for at least $5 billion worth of retrofit activity annually that happens irrespective of the availability of ratepayer-funded incentives.

[11] As argued in the following section, the inaccuracy of broadly assuming an existing conditions baseline is compounded if these same savings are misleadingly counted multiple times as naturally-occurring savings in the demand forecast and/or code-induced savings in PA claims and then again as incentive program-induced savings that PAs may now claim a second (or third) time.

of EE is the difference between the energy consumption after an intervention is made and the amount of energy that would have been used had the intervention not occurred. As such, the appropriate baseline for ratepayer-funded programs should always be determined by the counterfactual question: what would have occurred had the ratepayer investment not been made?[12] Choosing existing conditions as a baseline is essentially arguing that the energy consumption of an existing building would have stayed the same indefinitely absent a ratepayer-funded intervention. While evidence may exist to support this assumption in a narrow set of cases, it cannot be assumed generally that there is no turnover in the market or that existing buildings and equipment would last indefinitely. Applying this assumption indiscriminately will lead to EE dollars being spent inappropriately on savings that are not stranded, leaving fewer resources with which to address truly stranded EE.

The assumption that existing conditions should be used as the baseline should be applied narrowly to those sectors and segments where strong evidence supports the calculation that little or no investment in EE is likely to happen without ratepayer investment.

E. IOUs Should Not Double Count Below-Code Savings and Ratepayers Should Not Pay For Below-Code Savings Twice

The PAs currently run a set of Codes and Standards (C&S) programs that support the development and implementation of and compliance with energy efficiency codes and standards in California and nationally. The PAs claim savings based on their contribution to new state and federal codes and standards through advocacy, technical assistance, and other activities leading to the adoption of new Title 20 appliance standards, federal appliance standards, and Title 24 building codes.[13] In the 2010-2012 program cycle, the C&S programs accounted for 20-30% of overall IOU electric savings accomplishments and were the most cost-effective component of IOU portfolios, with Total Resource Cost (TRC) results more than three times as high as the rest of the portfolio.[14]

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[12] This is consistent with both current practice in California and nationally. See further, CPUC D.14-10-046 at 52 as well as U.S. Environmental Protection Agency (EPA), *Evaluation Measurement and Verification (EM&V) Guidance for Demand-Side Energy Efficiency (EE)*. Draft for Public Input, August 3, 2015, p. 11.

[13] The IOUs claimed Codes and Standards savings of 2,203 GWh, 374 MW, and 20.4 million therms (absent interactive effects) in 2010-2012. See Cadmus, *Statewide Codes and Standards Program Impact Evaluation Report For Program Years 2010-2012*, August 2014.

[14] Codes and Standards accounted for approximately 22% of IOU evaluated gross electric savings and 31% of IOU evaluated net electric savings in 2010-2012. The TRC for Codes and Standards was 3.64 while the rest of the

In the workshops and in previous filings in the EE proceeding, many parties argued that the use of code as the baseline for a variety of measures has produced "stranded savings" and that incentives based on above-code savings are insufficient to induce many customers in existing buildings to bring their buildings up to and beyond current code requirements. Parties argued that they should be permitted to incentivize customers and claim savings based on existing conditions as a baseline in order to capture these "stranded savings."

Many of the below-code savings that parties now argue are "stranded" and want to target with incentives have already been claimed as realized energy savings by the PAs through their C&S programs. If, as parties claim, these savings are truly stranded then they need to be removed from C&S program goals in order to avoid double counting. Indeed, parties to the EE proceeding have already acknowledged the need to avoid double-counting in cases where existing conditions is used as the baseline.[15] Staff plans to conduct at least one study in 2015 targeting turnover assumptions related to renovations and equipment in existing buildings and the results of this and other studies should be used to inform estimates of unrealized C&S savings and to target any future below-code interventions.[16] ORA urges the Commission to comprehensively resolve the double counting issue in the upcoming decision by adjusting C&S program goals, budgets, and savings estimation methods for future cycles to account for any reduced potential due to expanded use of existing conditions baselines.[17]

In addition to double counting, moving savings from the C&S bucket to the incentive program bucket raises the question of double payment. The ratepayers pay for codes and standards savings through C&S programs. The PAs now propose that ratepayers should fund additional programs targeting the same savings through incentive programs. This raises both accounting questions and cost-effectiveness questions due to double payment for the same set of savings that the Commission should consider in its upcoming decision.

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portfolio was barely cost-effective at 1.04. The Codes and Standards savings boosted total portfolio cost-effectives to 1.34. The See CPUC, *2010-2012 Energy Efficiency Annual Progress Evaluation Report*, March 2015, p. 13

[15] See, for example, PG&E's *Energy Efficiency 2015 Funding Proposal*, filed in R.13-11-005 on March 26, 2014, p. 26.

[16] See CPUC Energy Division, *2013-2015 Energy Division & Program Administrator Energy Efficiency Evaluation, Measurement and Verification Plan, Version 5*, p. 169.

[17] Another possible area for the Commission and Staff to review are the turnover assumptions built into the Effective Useful Life (EUL) parameters in the DEER database. As a default turnover assumption, the EUL informs both C&S impact estimates and C&S potential and goals. If EULs are in fact substantially longer than assumed (meaning equipment is functioning and not replaced as often as currently assumed), the savings from C&S would be overstated and the potential savings available for program-induced early retirement would be understated.

F. Comparison or Control Groups Should Be Used Whenever Feasible in Order to Determine Program Attribution.

Normalized metered energy consumption utilizes algorithms to account for the effects of changing weather and occupancy (among other factors) on energy use when calculating energy efficiency savings. The proper attribution of these savings – whether they are naturally occurring or can be attributed to specific programmatic interventions— requires the further step of comparing these savings to those of a randomized control group (experimental design). In situations where randomized control is not practical, matching participants with a similar group of non-participants (quasi-experimental design) should be used.

The use of control or comparison groups is the superior method for determining attribution because it does not rely on surveys or any other "subjective" forms of information to draw conclusions about program effects. Instead, experimental or quasi-experimental designs are indifferent to the individual's state motivation for undertaking some measure. Rather, the important information is the number of people in the program "treatment group" and similar non-participants "control group" who invest in a given intervention, and the energy savings that result from this investment. It relies on large numbers to statistically infer the effects of the program. For this reason, the use of control groups to calculate program effects is also considered a best practice for representing baseline energy use in whole building (metered) applications by the Environmental Protection Agency (EPA).[18]

The same logic of using control groups for attribution underlies the Commission's order in phase I of the EE proceeding requiring the IOUs should run a set of baseline pilots using experimental design in order to determine whether a change in baseline would in fact result in greater cost-effective savings.[19] PU Code § 381.2(d) references the pilots as an important input into the Commission's decision on AB 802 implementation and should be a key input into any revisions to baseline policy. The Commission ordered the baseline pilots more than 16 months ago and as yet none have begun implementation. Since the pilots are ordered to run for a full 12 months following roll out to account for seasonality, no results can be expected before Q1 2017. These implementation delays have therefore undermined the purpose for which the pilots were

[18] EPA. *EM&V Guidance*, p. 12.

[19] D.14-10-046 at 74-75 and OP 8. An advice letter (PG&E AL 3622-G/4693-E) for a statewide electric baseline pilot focused on lighting retrofits run by the three electric IOUs (PG&E, SCE, and SDG&E) was approved in September 2015 and an advice letter (SoCalGas AL 4682-G) for a gas baseline pilot focused on boilers run by SoCalGas was approved in October 2015.

ordered.

In regards to normalized metering, program attribution remains a critical metric for ratepayer-funded programs. An awareness of attribution – what changes are attributable to program or measure interventions and what would likely have happened regardless – is an essential tool in NMEC programs in order to ensure that EE resources are directed where they will have the greatest impact. The Commission should therefore require the use of comparison or control groups to determine savings attributable to AB 802 programs whenever feasible.

G. ORA Recommends Following National Best Practice for Determining the Appropriate EE Baseline

Energy efficiency baseline determination is a well-researched area of EE Evaluation, Measurement, and Verification (EM&V) activities. Research studies aimed at determining the appropriate baseline for a wide range of EE measures, program designs, and situational contexts are commonplace across the country and beyond.[20] The EPA, as a part of its recently enacted Clean Power Plan (CPP), requires that "all EE providers demonstrate that they will apply best-practice EM&V approaches"[21] and to that end developed a guidance document to aid states in successfully implementing the best-practice EM&V provisions of the CPP. States are allowed to utilize alternative means to meet the EM&V requirements, so long as a state "satisfactorily demonstrates…that such alternative means of addressing requirements are as stringent as the presumptively approvable approach."[22]

The EPA's EM&V guidance document includes a section specifically detailing national best-practice for EE baselines.[23] Consistent with the Commission's leadership in energy efficiency, EPA's EM&V guidance is quite similar to current Commission policy on baselines in many cases, including the applicable baseline for the early retirement, replace on burnout, and new construction cases.[24] EPA guidelines also suggest that all whole building approaches

[20] For example, the 2015 International Energy Program Evaluation Conference had three full panels devoted to EE baseline development and baseline studies.
[21] EPA, *EM&V Guidance*, p. 1.
[22] EPA, *EM&V Guidance*, p. 1.
[23] EPA, *EM&V Guidance*, pp. 11-14
[24] For replace on burnout, the EPA guidelines recommend the use of state standards as the baseline whenever a state is claiming the savings increment above federal standards. In cases without an applicable standard, the EPA recommends the use of market average industry/consumer practice. For new construction, the EPA generally recommends the use of applicable state and local building codes. For replace on burnout, the EPA recommends a

measuring consumption at the meter use a control or comparison group in order to account for what participants would have done in the absence of the program.

Given the EPA's best-practice recommendations and the requirement to demonstrate the alternative approaches are at least as stringent as the model guideline, ORA has two further recommendations:

1. Commission staff should review current baseline practice and consider revisions where EPA guidance and current Commission policy diverge.
2. The Commission should only adopt new baseline policies in those cases in which parties can provide compelling evidence that an alternative baseline generates a more reasonable set of assumptions than current practice.

The first recommendation above targets improvements to current Commission policy where California may have room for improvement. In particular, the EPA guidance recommends the use of existing conditions as the baseline for all building shell improvements that do not trigger new construction code compliance. This is a reasonable policy, given that building shell measures rarely spontaneously require replacement ("burn out") and that many building shell improvements are not made with a focus on energy savings. To the extent that the Commission's current baseline assumptions for building shell and other measures are less reasonable than the EPA guidelines recommended baselines, the Commission should consider updating its practices.

The Commission should not adopt a new set of EE baselines that diverge from national best-practice in the absence of strong evidence that a new baseline is more reasonable and accurate. ORA's recommendation requiring compelling evidence for alternative default baselines sets the evidentiary standard at a level that ensures that any alternative baselines meets the EPA's requirement for equivalent stringency and therefore does not undermine the reliability of California EE savings estimates.

III. POLICY CONSIDERATIONS IN IMPLEMENTING EXISTING CONDITIONS BASELINE

A. Assessment of Stranded Potential in Existing Buildings

"What energy efficiency is currently occurring in the building stock, and what is stranded?"

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dual baseline with an existing conditions baseline in the first period and the relevant state standard in the second period. CPUC's baseline policies almost exactly mirror the EPA's recommendations.

ORA cannot offer a comprehensive assessment of stranded potential in existing buildings. However, existing evidence contradicts the blanket assertion that all or most potential in existing buildings is stranded. For example, data from the 2010-2012 Commercial Saturation Study[25], show that inefficient T12 tubular florescent lamps[26] were not widely installed in very small and small businesses (29% and 12% respectively) and were virtually absent among large or medium business (4% and 5% respectively).[27] This example demonstrates the need to carefully target programs and not *assume* that stranded potential is widespread. The Commercial Saturation Survey in particular offers data that can be used to target existing baselines programs carefully and avoid widespread duplication or free-ridership.

B. Implications of Existing Conditions Baselines

"Does existing conditions baseline count for everything required by Title 24? Title 20? Federal standards? What would be the implications and consequences of using existing conditions baseline without exception?"

AB802 is clear that Title 24 should not be considered in baseline determinations when NMEC is used, but the statute allows consideration of Title 20 minimum equipment efficiency standards as a possible baseline. When using NMEC methodologies with a comparison group, however, the problems of determining the correct baseline 'wash-out' as any Title 20-induced changes in energy use should be equally influential in both the comparison and treated groups. Otherwise, for most measures covered by Title 20 as well as federal standards, an existing conditions baseline should only be used in programs that have been carefully targeted to address well-documented issues of stranded efficiency.

The Commission runs the risk of vastly increasing unnecessary subsidization of EE that would have occurred regardless – the 'free-rider' problem – if it adopts existing conditions as the baseline for a wider swath of programs and measures. In doing so, the Commission would squander ratepayer investments in EE without actually increasing efficiency savings (a lose-lose

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[25] *California Commercial Saturation Survey*, Itron, Inc. produced for the California Public Utilities Commission, August 2014. Available at http://capabilities.itron.com/wo024/.

[26] Tubular fluorescent lighting is the most common commercial indoor lighting measure in California, widely used in office, retail, and other commercial applications. Most T8 fluorescents are compliant with Title 20 standards, while T12s make up the vast majority of below code lamps. T5 and LED lamps are the most common above code options.

[27] *The First Generation of Thin is No Longer In, by* Jean Shelton, ITron Inc., San Diego, CA Priya Sathe, Itron Inc., Oakland CA and Lisa Paulo, CPUC – Energy Division, San Francisco, CA.

proposition). Unless budgets are massively increased to cover this unproductive use of energy efficiency dollars, the money spent on 'to code' incentives will reduce money available for much more productive investment.

Whether the benefits of changing baseline to existing conditions outweigh the additional costs and risks will depend on careful program design to target incentives towards truly stranded efficiency and not simply efficiency investments that would likely have naturally occurred.

C. Existing Conditions Baseline Applications and Exceptions

"If exceptions are warranted, how do we define them? For instance, for upstream, midstream, and downstream interventions? Are there types of building ownership and uses that are reliably upgraded and brought to code?"

Please see ORA comments above related to national best practice for baselines in section II-F and II-G above.

D. Baseline and Savings Values for Deemed Measures

What issues need to be addressed with deemed and calculated savings approaches in order to accurately apply existing conditions baseline? Does existing conditions baseline apply to measures being replaced on burnout? How do we determine whether a project is replace on burnout or early retirement?

Please see ORA comments above in sections II-B, II-C, II-F, and II-G.

E. The Future Role of Metered vs. Deemed/Calculated Approaches

"Currently, virtually all of portfolio savings are estimated, either through deemed or calculated methods, but both AB 802 and SB 350 focus on meter-based savings. To what extent should the future EE portfolio be metered/ pay for performance versus deemed/calculated savings? In other words, which types of EE activities are best reached through metered approach and which are best reached with deemed or calculated savings approaches?"

Unlike deemed or calculated savings, which simply provide estimates of savings and are prone to systematic errors, metering has the potential to measure savings accurately, subject to the adjustments made in the normalization process. Thus, NMEC opens up a host of possibilities that could help catalyze energy efficiency investments. At the very least, accurate measurement,

when combined with the more rigorous methods of attributing savings that control group comparison provides, should allow PAs to create 'pay-for-performance' incentive schemes that might unlock deeper saving through mechanisms such as a behavioral change. As confidence in metered measurement grows, a transaction system for treating EE as a supply-side resource could take shape, allowing for the influx of private institutional capital into the financing of EE investments.

IV. NORMALIZED METERED ENERGY CONSUMPTION: OPERATIONALIZING DIRECTIVES IN ASSEMBLY BILL 802 AND ASSEMBLY BILL 793

A. HOPPs "Definitions and Requirements" for Using Normalized Metered Energy Consumption as a Measure of Energy Savings

Please see ORA's earlier comments in II-A, II-B, and II-E

B. Current Applications of Normalized Metered Energy Consumption

No additional comments.

C. Program Designs That May Be Enabled by AB 802

No additional comments.

D. Expectations on Review Processes and Transparency

The premise of normalized metered energy consumption rests on comparing metered consumption against a baseline consisting of past consumption normalized for weather, occupancy and other exogenous variables that affect consumption. For normalization to be accepted as legitimate by all the parties involved (consumers, implementers, program administrators, and regulators), it is imperative that the algorithm used in normalization be transparent, reasonable, and non-proprietary. There can be no black boxes and no private interest should 'own' the algorithm.

One key task of the review process will be for a panel of technical experts to review the normalization algorithm used in any given program or process to assure the reasonableness of the assumptions it is built on and thus the reasonableness of the metering process and the metered savings estimates.

A second task for the review process is to makes sure that appropriate control or

comparison groups are created and data collected on those groups along with any metering plan. The absence of a control or comparison group makes it much more difficult to tease out and distinguish program effects from the underlying baseline of what might have occurred anyhow.

V. CONCLUSION

ORA appreciates the opportunity to comment on the recent baseline workshops and to inform the Staff's upcoming white paper on baselines and the implementation of AB 802.

Date: February 10, 2016

Respectfully submitted,

By: _____/s/_____
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