COMMENTS OF THE UTILITY REFORM NETWORK ON IMPLEMENTING EXISTING CONDITIONS BASELINE PURSUANT TO ASSEMBLY BILL 802 (2015, Williams)

February 10, 2016

(Submitted to Energy Division Staff)

I. INTRODUCTION

The Utility Reform Network (TURN) 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 (2015, Williams), which focused on policy issues associated with the application of an existing conditions baseline and the measurement protocols for normalized metered energy consumption. TURN has organized these comments to generally follow the workshop agendas.

II. POLICY CONSIDERATIONS IN IMPLEMENTING EXISTING CONDITIONS BASELINE

On October 8, 2015, the California Legislature enacted AB 802, which, among other things, directs the Commission to modify its energy efficiency portfolio by September 1, 2016, to include "programs" which provide "financial incentives, rebates, technical assistance, and support" to utility customers to "increase the energy efficiency of existing buildings based on all estimated energy savings and energy usage reductions."[1] Such programs shall take into consideration the "overall reduction in normalized metered energy consumption as a measure of energy savings," and include "energy usage reductions" resulting from activities to bring the building "into conformity with, or exceed, the requirements of Title 24 of the California Code of Regulations, as well as operational, behavioral, and retrocommissioning activities reasonably expected to produce multiyear savings."[2] Moreover, AB 802 requires the Commission to permit the electrical and gas utilities "to count all energy savings achieved through the authorized programs created by this subdivision, *unless determined otherwise*, toward overall energy

[1] AB 802 (2015, Williams), Section 6, codified as Public Utilities Code (PU Code) Sections 381.2(b)-(c).

[2] PU Code § 381.2(b).

efficiency goals or targets established by the commission."[3] AB 802 thus requires the Commission to revisit its policies regarding the baseline against which energy savings associated with ratepayer-funded energy efficiency programs should be measured, and more specifically, to determine how to expand the use of an "existing conditions baseline" (ECB).

Changes to the Commission's pre-AB 802 baseline policies should be undertaken with considerable investigation and care to ensure that the new policies achieve the intended benefits: to increase the effectiveness of ratepayer-funded energy efficiency programs at delivering incremental, cost-effective energy savings that are used to avoid more costly supply-side generation, distribution, and/or transmission investments, consistent with the State's "Loading Order" and environmental laws and policies. To this end, TURN offers the following comments to assist the Commission in exercising the considerable discretion afforded it by AB 802 to determine when not to apply an ECB for purposes of counting savings towards the utilities energy savings goals, and when and how an ECB should be applied. In the sections that follow, TURN first recommends an overarching framework for assessing when to apply an ECB. Second, TURN applies our recommended framework in responding to some of the specific questions presented by Staff at Day 1 of the AB 802 workshops.

A. TURN's Recommended Overarching Framework For Determining Whether to Apply an Existing Conditions Baseline

TURN recommends that the Commission apply a two-part test in determining whether to apply an ECB. The first inquiry should be whether existing EE policies "strand" energy savings at the measure or market sector (or subsector) level. Where the answer to that question is "yes," the Commission should then ask whether applying an ECB is a reasonable approach to overcoming the cause of this "stranding." Each of these elements is discussed below.

[3] *Id.* (emphasis added).

1. First Inquiry: Do existing EE policies strand energy savings at the measure or market sector (or subsector) level?

Whether stranded savings exist depends upon the meaning of "stranded savings." Many stakeholders have warned of "stranded" savings in this proceeding over the past two years, but to TURN's knowledge, the Commission has never adopted a definition of "stranded savings." In TURN's view, there are two distinct types of "stranded savings," what can be referred to as "long-term stranded savings" and "short-term stranded savings." We recommend that the Commission distinguish between the two as follows.

Long-Term Stranded Savings: Long-term stranded savings exist where measures and/or systems in an existing building are unlikely to be replaced with code-compliant or code-exceeding measures and/or systems at the end of their estimated useful lives, irrespective of current code requirements, financial and/or technical support available through ratepayer-funded EE interventions, tax policies, and other programs intended to promote EE in existing buildings. Long-term stranding may result from a number of potentially inter-related market barriers, including but not limited to financial or practical resource constraints, "repair indefinitely" strategies undertaken by the building owner, equipment purchases on burnout from secondary markets, and building owners and contractors following what may be a common practice of code non-compliance within that specific market sector or measure type.[4]

Short-Term Stranded Savings: Short-term stranded savings exist where measures and/or systems in an existing building are unlikely to be replaced with code-compliant or code-exceeding measures and/or systems *until* the end of their estimated useful lives or the next regularly scheduled maintenance, upgrade, or retrofit, irrespective of financial and/or technical support for early retirement of measures or systems that is available through ratepayer-funded EE interventions, tax policies, and other programs intended to promote EE in existing buildings.

[4] Common code non-compliance in permitted or unpermitted alterations could be attributable to a number of factors, including but not limited to code complexity, customer demand for unpermitted projects (to save money and/or time, for instance), and contractors being rewarded for the lowest price rather than code compliance. *See, e.g.,* TURN's Post-Workshop Comments on Energy Efficiency Baselines and To-Code Incentive Eligibility Issues, submitted informally to Energy Division on May 28, 3015, Section V, pp. 7-8 (discussing the role of code complexity in code non-compliance).

2. Second Inquiry: Where stranded savings exist, is applying an ECB a reasonable approach to capturing those savings?

TURN submits that the answer to this question should depend on whether the stranded savings at issue are long-term or short-term stranded savings, as well as whether ECB is reasonably tailored to address and overcome the market barrier(s) to increasing the efficiency of existing buildings. We offer the following reflections on the use of ECB for long-term and short-term stranded savings.

Long-Term Stranded Savings: In buildings with long-term stranded savings, applying an ECB could justify higher incentives or increased support, which in turn could stimulate retrofit projects that would otherwise not happen at all, or would not comply with code, for an indefinite number of years. Applying an ECB could be a reasonable tool for overcoming the market barriers to upgrading such buildings if lack of financial resources or technical support is among the significant barriers.

Short-Term Stranded Savings: In buildings with short-term stranded savings, applying an ECB could justify higher incentives or increased support, which in turn could accelerate EE upgrades that would otherwise await burnout or a regularly scheduled maintenance/retrofit cycle. Under some circumstances, accelerated market activity could confer significant ratepayer benefits, particularly where there are location-specific avoided costs associated with system constraints, and the EE is sufficiently targeted and voluminous to actually impact utility infrastructure decisions. In other circumstances, ratepayers might simply pay higher incentives for very short-lived *incremental* savings, such as where the measure would have been replaced at code or above in two or three years. As such, it may be more reasonable for the Commission to expressly target long-term stranded savings through its implementation of AB 802 than to treat both long- and short-term stranded savings the same.

B. Workshop Day 1, Topic 1: Assessment of Stranded Potential in Existing Buildings

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

The answer to this question depends on the definition of "stranded" potential (or stranded

savings). TURN recommends that the Commission employ the definitions of short- and long-term stranded savings we discuss above in evaluating this question.

Moreover, in making factual determinations as to where short-term and long-term stranded savings lie, the Commission should rely on best available information and data. Based on the discussions at the AB 802 workshops, that data appears to exist in several recent EM&V studies, including the Codes & Standards Impact Evaluation Studies for Program Years 2010-2012 and 2006-2008 discussed by Holly Farah, Cadmus;[5] and the Commercial Saturation and Market Share Tracking Studies discussed by Jean Shelton, Itron[6] (suggesting in part what is not stranded). Navigant's technical analysis to assess the impacts of ECB on EE potential, which TURN understands to be ongoing and which was the subject of Staff's November 6, 2015 workshop, should also offer relevant information when the results are available.[7] And the California Technical Forum (CalTF) has research underway that may offer additional, valuable information for the Commission to consider, particularly on "repair indefinitely" measures.[8] TURN has not reviewed this research at length, due to resource constraints, but we assume that other parties will use these sources to identify where stranded potential lies in the existing building stock.

While TURN submits that the identification of stranded savings should be data-dependent, we also suggest that it may be reasonable to tentatively conclude, absent data to the contrary, that the thermal integrity of and heating and cooling systems in residential dwelling units owned and/or occupied by low- to moderate-income households are not reliably upgraded and brought to code or beyond. Indeed, this is why a direct install delivery channel makes sense

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[5] "Statewide C&S Program Impact Evaluation Report For Program Years 2010-2012," prepared for the CPUC by Cadmus, Energy Services Division, DNV GL, August 2014, CALAMC ID CPU0070.03; "C&S Programs Impact Evaluation for Program Years 2006-2008," prepared by KEMA, Cadmus, and Itron, CALMAC Study ID: CPU 0030.06.

[6] "California Commercial Saturation Survey," prepared by Itron, August 26, 2014, and "Commercial Saturation and Commercial Market Share Tracking Study Telephone Survey Findings," prepared by Itron, September 22, 2015.

[7] At the January 2016 workshop, Navigant did not appear to be ready to offer findings.

[8] *See* R.13-11-005, NRDC Comments on Staff's White Paper Regarding High Opportunity Programs or Projects, Attachment 1, CalTF Review of Repair Indefinitely Measures, p. 4 (describing the analysis of the CalTF Savings to Code Subcommittee and its conclusion that "RI [Repair Indefinitely] measures hold some of the greatest, most easily achieved below code potential—those with the largest savings stranded by code, about which data is most likely to be readily available, and for which programs could be created while avoiding the potential pitfalls already highlighted by the Commission.").

for such customer segments and building types, and is offered through the Energy Savings Assistance Program and Middle Income Direct Install program. Under a similar logic, the Commission could tentatively conclude that stranded savings exist in buildings occupied by very small commercial customers who are eligible for treatment through the small commercial direct install program. Although eligibility for these direct install programs may be a reasonable, temporary proxy for where stranded savings exist, TURN cautions that applying ECB with a direct install delivery channel may not make sense, particularly in the small commercial sector, where direct install has generally been limited to relatively cheap and easy measures, as opposed to more comprehensive treatments.

Additionally, until more current information and data is produced by the ongoing ECB savings potential technical analysis being conducted by Navigant, the Commission can look to the Title 24 compliance rates associated with various measures, building types, and market sectors that were assumed in the September 2015 EE Potential Study, appended to D.15-10-028.[9] Table D-2 in Appendix D of the 2015 EE Potential Study presents compliance rates and effective dates for every Codes and Standards measure impacting Navigant's analysis. The assumed compliance rates include a mix of *ex post* and *ex ante* values, depending on the vintage of code and status of Energy Division's M&V efforts. Where the assumed compliance rates are very low, the Commission may be able to conclude, at least tentatively, that stranded savings exist in those measures, building types, and market sectors. TURN cannot point to the specific location of stranded savings that would flow from this inquiry, as we understand this to be within Navigant's scope of work and have not undertaken the required analysis.

If the Commission finds that the contents of Table D-2 support the conclusion, at least tentatively, that to-code savings are stranded within particular measures (with very low assumed code compliance rates) and should be targeted by the Program Administrator Programs, the Commission would need to make accounting adjustments to avoid crediting some or all of these "stranded savings" both to the Program Administrator Programs via ECB and to the Codes and Standards (C&S) Program, as TURN discusses in Section II.C below.[10] TURN notes that the

[9] D.15-10-028, Appendix 2 ("Energy Efficiency Potential and Goals Study for 2015 and Beyond, Stage 1 Final Report," Navigant Consulting, September 25, 2015).

[10] TURN is providing with these comments an Excel file we received from Navigant showing the C&S savings assumptions used in the potentials analysis which could be used to "back out" GWh, MW, and MM therms in savings attributed to the C&S program, where appropriate.

information included in Table D-2 may shed light on stranded savings related to code non-compliance (including during voluntary building alterations and, to some degree, at the point of natural equipment turnover), but does not necessarily reflect all causes of stranding.

C. Workshop Day 1, Topic 2: Implications of Existing Conditions Baselines

Staff asked, *"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?"*

TURN urges the Commission to conclude that ECB should not be used throughout the portfolios without exception. Rather, ECB should be strategically applied to capture EE potential in existing buildings that will neither be reached through ratepayer-funded programs utilizing the existing baseline policies, nor be naturally occurring. As noted above, ECB should primarily be used to target long-term stranded savings, but applying ECB to existing buildings with short-term stranded savings could also be reasonable if the location-specific avoided costs are significant and the EE is sufficiently targeted and voluminous to actually impact utility infrastructure decisions.

Universally applying an ECB would cause multiple types of harm. First, it would condone the expenditure of ratepayer funds to promote energy efficiency that would occur anyway. For instance, in markets where customers will replace existing appliances with code compliant appliances on burnout, there is no reasonable basis for providing customers incentives to purchase the very same appliances that retailers are required to stock in California. Appliances regulated by Title 20 and federal appliance standards, such as refrigerators and washing machines, are the types of measures for which an ECB would be inappropriate because there are no long-term stranded savings.[11] There may be short-term savings that could be captured from an early retirement intervention aimed at appliances governed by Title 20 and/or federal appliance standards, but TURN cautions against widespread application of ECB for early retirement across all measures, building types, and customer sectors, as explained in Section II.A

[11] However, the purchase of used, non-code compliant refrigerators through secondary markets makes a 100% code compliance assumption unreasonable.

above. Instead, continued application of the existing dual baseline policy for early retirement of most appliances fairly reflects the benefits to ratepayers. Of course if the Commission finds data demonstrating stranded savings associated with particular appliances among certain market sectors or building types, an ECB could be appropriate.

Likewise, for building types where owners conduct routine maintenance and code-compliant upgrades on a regular cycle, an ECB would generally be inappropriate, due to the absence of long-term stranded savings. Some parties at the workshops suggested that Class A commercial office buildings fall into this category. While this may be true, TURN cannot point to specific data establishing this fact.

Second, applying an ECB without exception would double-count savings already being attributed to the Codes and Standards (C&S) program and/or counted as "naturally occurring," unless adjustments are made to the savings attributed to the C&S program or considered naturally occurring.[12] To the extent that potential EE savings are "stranded" in California's existing building stock, unreachable under the current policy regime, then it would be unreasonable to assume that the C&S program has or will deliver those same savings, or that those savings will occur naturally. Changing baseline policies will thus require a recognition that the C&S program is not performing as expected and a re-examination of assumptions regarding naturally occurring savings. Otherwise, utility system planning problems will occur.

This second harm is related to the first harm, though the implication is different. To avoid double-counting, the Commission should move potential EE savings from the C&S bucket to the Program Administrator Programs bucket, reducing the former and increasing the latter, for measures or market sectors where the Commission determines that defaulting to ECB is appropriate.[13] There's an additional complexity caused by the fact that some double counting

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[12] *See* D.15-10-028, p. 35 ("We have historically been concerned about avoiding double-counting of savings between C&S and programs. That is, we seek to avoid IOUs claiming C&S advocacy savings for measures, then also claiming credit for those measures in connection with a program. In D.14-10-046 we directed Commission Staff to work CEC staff to investigate this issue. Double-counting will be an issue to consider as we reexamine our policies concerning baseline in 2016, including reflecting legislative direction, to allow savings credit for 'to and through code' activities.").

[13] *See, e.g.,* CEC Draft Staff Report, California Energy Demand 2014-2024 Revised Forecast, Volume 1: Statewide Electricity Demand, Und-User Natural Gas Demand, and Energy Efficiency (CEC- 200- 2013-004- SD- V1- REV), September 2013, pp. 78-81 (discussing the CEC's incorporation of committed building codes and appliance standards into its residential and commercial end-use consumption forecasting models).

may occur between future ECB applications and savings credited to the C&S program from older vintages of Title 24 in prior years. Ratepayers have paid for these "savings" (that may not have actually materialized) through C&S program costs and may have also paid shareholder incentives associated with the IOUs' claimed C&S savings. TURN flags this problem here but does not propose a remedy at this time.

Third, applying an ECB without exception would misdirect finite resources at a time when strategic targeting is required to maximize incremental EE in support of the state's "doubling" goal, per Senate Bill (SB) 350.[14] It should go without saying that the Commission must protect ratepayers from paying for EE that would occur anyway, in addition to all of the EE required to meet the new requirements of SB 350. As such, the Commission should implement AB 802 in a manner that supports the capture of stranded savings *in reality*, and thus a bona fide increase in the efficiency of existing buildings, not simply a change in the counting rules. Ratepayers cannot afford to throw more money at the same savings.

TURN raises all of these issues mindful of the distinction between the policy matter of when ECB should apply (or should not apply) for purposes of counting savings towards the EE goals, and when incentives and other support should be provided based on a calculation of all savings in existing buildings, even where there are no stranded savings. Indeed, AB 802 separately treats the "counting" question and the availability of incentives.[15] While TURN would hope that incentives would be structured to promote incremental savings to the maximum extent that is consistent with the portfolio cost-effectiveness requirements, TURN does not here opine on how the Program Administrators and implementers should design incentives to achieve the

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[14] *See* SB 350 (2015, De Leon), Section 6, amending Public Resources Code § 25310(c)(1) to require that the CEC, on or before November 1, 2017, "in collaboration with the Public Utilities Commission and local publicly owned electric utilities, in a public process that allows input from other stakeholders, shall establish annual targets for statewide energy efficiency savings and demand reduction that will achieve a cumulative doubling of statewide energy efficiency savings in electricity and natural gas final end uses of retail customers by January 1, 2030. The commission [CEC] shall base the targets on a doubling of the midcase estimate of additional achievable energy efficiency savings, as contained in the California Energy Demand Updated Forecast, 2015-2025, adopted by the commission, extended to 2030 using an average annual growth rate, and the targets adopted by local publicly owned electric utilities pursuant to Section 9505 of the Public Utilities Code, extended to 2030 using an average annual growth rate, to the extent doing so is cost effective, feasible, and will not adversely impact public health and safety."

[15] *See* PU Code § 381.2(b) (including separate directives to the Commission regarding the availability of "financial incentives, rebates, technical assistance, and support" for existing buildings and the counting of energy savings from such incentive programs towards the EE goals).

end of maximizing incremental savings.

D. Workshop Day 1, Topic 3: Existing Conditions Baseline Applications and Exceptions

Staff asked, *"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?"*

TURN recommends that the Commission adopt exceptions to ECB for measures, building types, and market sectors where (1) no significant stranded savings exist or (2) where the benefits of ECB are misaligned with the cause of stranding. AB 802 expressly requires the Commission to consider the results of Navigant's baseline study and "[a]ny available results from the investor-owned utility baseline pilot studies ordered in D.14-10-046" in determining how to implement ECB. TURN likewise notes that the To-Code Pilots and some of the HOPPs programs may provide useful information as the Commission determines whether ECB reasonably gets at the specific barrier(s) to EE where stranded savings are found.[16] Please see TURN's response in Section II.B above for additional guidance in determining where stranded savings exist.

Furthermore, exceptions are appropriate where the intervention strategy does not directly come into contact with the existing building, such as in upstream and some midstream interventions. There are two reasons to exclude upstream and midstream interventions. First, the existing conditions in the buildings where promoted measures will ultimately be installed may not be known or knowable. Second, unlike downstream programs, these interventions are not likely to cause projects to occur that would otherwise not occur; they influence the purchase of above code equipment and appliances for projects that a customer has already decided to undertake. It would thus be unreasonable to attribute savings from upstream and midstream

[16] For example, SDG&E has indicated that it plans to propose a HOPPs program that will target small to midsize commercial customers with more than 39 lighting fixtures, starting with "previously treated customers with remaining opportunities as most previous customers had at most 39 fixtures upgraded to avoid triggering code." *See* SDG&E Presentation, "High Opportunity Projects and Programs (HOPPs) Proposals," January 15, 2016, presented to stakeholders after the conclusion of the first Coordinating Committee Meeting and served on the service list to R.13-11-005 on January 19, 2016. This program could test the assumption that providing additional incentives and/or technical support can effectively overcome the barrier of code complexity related to lighting alterations in commercial buildings.

interventions using an ECB.

TURN notes that one of the workshop presenters, Ted Pope, offered a decision tree to guide baseline determinations in upstream, midstream, and downstream programs currently using deemed measures. Mr. Pope's diagram indicated that midstream interventions might drive projects, and thus might be appropriate for ECB if a number of other conditions are met. Despite our general belief that ECB should not apply to midstream interventions, we acknowledge that exceptions might be possible, as illustrated by Mr. Pope.

E. Workshop Day 1, Topic 4: Baseline and Savings Values for Deemed Measures

1. What issues need to be addressed with deemed and calculated savings approaches in order to accurately apply existing conditions baseline?

2. 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?

As a general matter, ECB should be limited to circumstances where stranded savings exist. Where a measure has burned out and will be replaced with a code compliant measure, there are no short-term or long-term stranded savings (see Section II.A above), and there is no reasonable basis for crediting to-code savings to the EE goals. On the other hand, long-term stranded savings may exist where equipment has reached the end of its estimated useful life (EUL) and fails, is repairable, and is likely to be repaired, thus extending the EUL, or where replacement is likely to occur from a secondary market offering readily available, non-code compliant equipment.

Accordingly, TURN recommends that the Commission apply a code baseline rather than ECB where new equipment needs to be installed to replace equipment that is no longer functional and is not repairable. ECB should instead apply where the equipment at issue has a history of being repaired indefinitely or generally lasts longer than the currently adopted EUL. This is the approach taken by the Commission in implementing the requirements of AB 802 regarding "high opportunity projects or programs,"[17] and TURN recommends that it be extended

[17] Assigned Commissioner and Administrative Law Judge's Ruling Regarding High Opportunity Energy

to the full implementation of AB 802. An exception might also be warranted if data demonstrates that common practice, at least in certain markets, is to purchase specific replacement measures on the secondary market.

TURN has not done an analysis that would allow us to identify "repair indefinitely" measures with specific factual support, though we understand that other stakeholders have.

F. Workshop Day 1, Topic 5: The Future Role of Metered vs. Deemed/Calculated Approaches

Staff asked, *"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?"*

As an initial matter, TURN cannot help but note that both deemed and metered approaches produce estimates of the energy savings attributable to an EE intervention. While some types of EE activities are certainly best reached through a metered approach, this does not necessarily mean that using a metered approach will more accurately account for net savings attributable to those activities. Rather, the veracity of savings estimates produced by a metered approach will depend on the protocols and policies established by the Commission, just as is the case for deemed approaches.

Deemed savings work best for discrete mass market measures, such as manufacturer, distributer, and retailer-level interventions that influence consumer purchase decisions. Metered approaches are well suited to downstream, whole building interventions, and particularly those that bundle EE and other distributed energy resources. However, for metered approaches to be appropriate, there will need to be sufficient reductions in consumption and load to allow reasonable and sufficient adjustments to gross metered data for normalization and naturally occurring attribution.[18]

Efficiency Programs or Projects, issued Dec. 30, 2015, p. 17.

[18] *See* Assigned Commissioner and Administrative Law Judge's Ruling Regarding High Opportunity

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

In the Sections that follow, TURN addresses some of the specific questions presented by Staff at Day 2 of the AB 802 workshops.

A. Workshop Day 2, Topic 1: HOPPs "Definitions and Requirements" for Using Normalized Metered Energy Consumption as a Measure of Energy Savings

On December 30, 2015, the Commission issued *Assigned Commissioner and Administrative Law Judge's Ruling Regarding High Opportunity Energy Efficiency Programs or Projects* (HOPPs Ruling) as part of its implementation of AB 802, which required, among other things, that the Commission authorize the utilities to apply existing conditions baselines to "high opportunity projects and programs" (HOPPs) by January 1, 2016.[19] Through the HOPPs Ruling, the Commission preliminarily interpreted the language "normalized metered energy consumption" in AB 802 to meet the statutory deadline for the first stage of implementation. The Commission also clarified that it might refine the guidelines adopted in the HOPPs Ruling for wider implementation of AB 802 (required by September 1, 2016).[20]

TURN recommends that the Commission adopt the same definition of "normalized" (and related requirements) for the wider implementation of AB 802 as it adopted for HOPPs, unless and until data from HOPPs or other meter-based projects demonstrates that this degree of normalization produces no statistically significant impacts on savings attribution.[21] Even under a metered approach to estimating savings impacts from EE interventions, attribution is important to enable the Commission to determine that ratepayer dollars are delivering incremental, cost-effective energy savings, as well as to support reasonably accurate reliance on EE impacts in utility system planning. The prospect of double-counting EE program impacts and savings elsewhere assumed to be naturally occurring or a direct result of the C&S Program – discussed in

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Energy Efficiency Programs or Projects, issued Dec. 30, 2015, pp. 8 ("Single Measures"), 16 (providing requirements for projects using normalized metered energy consumption as a measure of savings).

[19] PU Code § 381.2 (c), as amended by AB 802.

[20] HOPPs Ruling, pp. 23-24.

[21] *Assigned Commissioner and Administrative Law Judge's Ruling Regarding High Opportunity Energy Efficiency Programs or Projects*, issued Dec. 30, 2015, Attachment A, pp. 1-2 (interpreting "normalized" in the phrase "normalized metered energy consumption" appearing in AB 802).

Section II.C above -- threatens the integrity of the Commission's and other agencies' grid planning activities.

B. Workshop Day 2, Topic 2: Current Applications of Normalized Metered Energy Consumption

C. Workshop Day 2, Topic 3: Program Designs That May Be Enabled by AB 802

The NMEC requirements of AB 802 create an opportunity to expand the reach and impacts of the EE portfolio by giving implementers new tools to make EE upgrades more attractive to building owners.[22] Related, these requirements can and should support the testing and demonstration of new transaction structures and business models that leverage capital frameworks and borrowing terms for EE similar to avoided energy supplies. When considering how the Commission's NMEC policies might facilitate these opportunities, it is important to keep in mind that a building owner is not concerned about the allocation of energy savings from a building alteration between the mandates of Title 20/24 and the incentive program because attribution does not change the net savings effect at the meter. Of course policymakers must be concerned with attribution for the reasons discussed above. Thus, TURN recommends that the Commission ensure that its forthcoming NMEC policies and requirements serve two purposes: (1) to support new program designs and meter-based transaction structures that may increase market uptake in existing building retrofits,[23] and (2) to support reasonable attribution of savings to EE program interventions for ratepayer protection and grid planning.

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[22] TURN uses the term "building owner" as broadly including homeowners, and owners of multi-family housing and commercial buildings.

[23] As TURN has previously suggested, NMEC methods that rely on dynamic baselines might track over time what a building's energy and load requirements would have been but for energy efficiency and other distributed resources through a series of algorithms that define the building's energy and load requirements by structure, function, equipment, operations, occupancy, and weather. These algorithms, if dynamic over time, would reflect changes in the building's energy math, including incremental advances from codes and standards changes and business refurbishment cycles. Ongoing calibration of dynamic baselines and comparison to metered load could provide a measure of efficiency persistence. With significant meter-specific energy reductions, efficiency would better lend itself to being procured as an energy resource. In this way, energy savings could be used to create new transaction structure opportunities to attract the capital markets to invest in building efficiency over a long-term horizon, e.g., 20-30+ years. *See, e.g.* R.13-11-005, TURN Comments on Phase II Workshop 3, April 13, 2015, pp. 18-21 (describing a Commercial Pay-for-Performance Pilot proposal).

TURN also recognizes that NMEC-enabled approaches to structuring EE transactions may fit better and offer greater benefits in the procurement context, rather than the DSM program context.[24] However, we believe it is important to develop knowledge and experience with NMEC in the EE portfolios, since that is the logical starting place in light of AB 802 and given where the relevant expertise exists at the Commission and within other organizations.

D. Workshop Day 2, Topic 4: Expectations on Review Processes and Transparency

At the AB 802 workshops on January 26-27, 2016, ORA and TURN distributed a jointly prepared two-page document outlining opportunities, challenges and recommendations in implementing AB 802, ECB and NMEC. This handout, attached to these comments for Staff's convenience, includes suggestions related to the review processes and transparency to ensure ratepayer accountability and minimize risk.

IV. CONCLUSION

TURN appreciates the opportunity to submit these comments and looks forward to participating in the Commission's continued deliberation over the implementation of AB 802.

Date: February 10, 2016

Respectfully submitted,

By: _____/s/_____
Hayley Goodson
Staff Attorney

The Utility Reform Network
785 Market Street, Suite 1400
San Francisco, CA 94103
Phone: (415) 929-8876
Fax: (415) 929-1132
Email: hayley@turn.org

[24] We also note the added simplicity that comes from not using ratepayer EE incentive dollars in metered transaction structures. The accounting by necessity becomes more complicated if incentive dollars from EE programs with separately measureable ("net") effects are used in meter-based transactions to help pay for savings. Incentives should go for incented effects, so where incented effects are being measured, a variety of "program attributed baselines" may need to be tracked.

ATTACHMENT

ORA and TURN Handout at AB 802 Workshops on Jan. 26-27, 2016

ORA and TURN

Existing Conditions Baseline and Normalized Metered Energy Consumption: Ratepayer Opportunities, Challenges and Recommendations

January 26-27, 2016

ORA and TURN have identified the following key ratepayer opportunities, challenges and recommendations in implementing AB 802, existing conditions baseline (ECB) and normalized metered energy consumption (NMEC).

Opportunities

1. Existing conditions baseline (ECB) creates the opportunity to in part realize currently-stranded code and standard (C&S) savings.

2. Normalized metered energy consumption (NMEC) creates the opportunity to advance the veracity of reported efficiency savings.

3. Existing conditions baselines (ECB) and normalized metered energy consumption (NMEC) measurement frameworks may open the door to new business models and transaction structures.

4. New business models and transaction structures could promote more comprehensive efficiency bundled with other demand-side investments through a combination of enhanced consumer-finance and large-capital markets investment.

5. Robust normalized metered energy consumption (NMEC) methods may facilitate more competitive procurement of efficiency bundled with other demand-side investments through standardized savings metrics.

Challenges

1. Moving savings from the highly cost-effective C&S program "bucket" to the less cost-effective incentive-based program "bucket" could further erode marginally cost-effective efficiency portfolios.

2. Broadly setting the baseline at existing conditions increases the risk of counting naturally occurring efficiency savings as incentive program-induced savings, thereby overstating the impact of efficiency programs on energy consumption and demand.

3. Normalized metered energy consumption (NMEC) measurement can create pressure to count non-efficiency consumption reductions and naturally occurring efficiency savings as program-induced efficiency-related savings.

Challenges (cont.)

4. In light of these heightened risks, new business models and transaction structures that are based on additional consumer cash outlays and financed debt must be sufficiently performance-based to minimize ratepayer risk from asymmetrical cost flows relative to efficiency savings.

5. Compliance with code retrofit and installation requirements becomes even more critical to the extent that using existing conditions baseline (ECB) in incentive programs fosters more equipment replacements and building system retrofits.

6. Otherwise, increased participation simply expands the current problems associated with non-compliance, including overestimating savings and "stranding" efficiency potential over the life of the newly installed efficiency assets.

Recommendations

1. Follow national best practices on baselines as documented in EPA's *EM&V Guidance for Demand-Side Energy Efficiency*. Any deviations from national best practice should require strong evidence that an alternative baseline is a more reasonable counterfactual.

2. Require a full and accurate counting and accounting of efficiency savings and ratepayer funding for C&S programs and any overlap with incentive programs. Savings should not be double-counted and ratepayers should not pay twice for the same savings.

3. Update the EM&V Framework and Protocols to account for advancements in measurement technologies and techniques and develop minimum standards for accuracy and reliability of savings estimates.

4. Conduct EM&V of existing and emerging NEMC methods and practices as applied through HOPPs and other efficiency and demand-side programs and activities.

Outcomes

1. A more accurate baseline policy that supports increased net efficiency savings that are both real and cost-effective.

2. A set of reliable and standardized NMEC analytics, methods, practices, and platforms.

EPA Draft EM&V Guidance for Demand-Side Energy Efficiency Baselines (Section 2.2.2) [25]

General Guidance

"The EPA, for the purposes of the emission guidelines, defines EE savings as the difference between observed electricity usage and an appropriate 'common practice baseline' (CPB)…One benefit of using a CPB is that it inherently adjusts the baseline over time to reflect market conditions and naturally occurring improvements in efficiency over time. Establishing a well-defined and consistently applied CPB avoids crediting [that which would have happened otherwise]."

Existing Conditions is the CPB

- **Building shell improvements of existing buildings** ("The existing condition of the building shell unless renovations are extensive enough to trigger new construction code compliance, in which case the following new construction guidance applies")
- **Early Replacement** ("**with strong evidence that replacement of functioning equipment is due to program influence**, a dual baseline is applicable…Use existing conditions for defining the CPB for the remaining useful lifetime (RUL) of the replace equipment or system. Use the CPB that would apply to new construction or replacement on failure for the remainder of the new equipment EUL")

Control or Comparison Group is the CPB

"In these cases, separately determining the CPB efficiency of individual pieces of equipment is unnecessary."

- **Randomized Control Trials** ("use the control group…to quantify the CPB electricity consumption")
- **Quasi-Experimental Approaches** ("use the comparison group…to quantify the CPB electricity consumption" and "design the comparison group and analysis approach in a way that represents what the participants would have done absent the program or absent the EE intervention")

Federal Code or Market Average Industry/Consumer Practice is the CPB

- **Replace on Failure** ("the federal standard or the market average industry/consumer practice at the time of implementation, *whichever results in a lower savings value*. This approach recognizes the dynamic nature of baselines in the context of changing market conditions")

State Code/Standard is the CPB or Market Average Industry/Consumer Practice is the CPB

- **Replace on Failure** ("for states that have product standards that are more stringent than the federal standard or market average, and where the state is counting the savings increment due to the more stringent product standard…use the state product standard as the CPB for EE at higher efficiency that the state product standard")
- **New Construction** ("for commercial buildings, the generally most stringent of the applicable state or local building code, market industry average practice in the state, or ASHRAE 90.1-2007/2009…for residential buildings, the generally most stringent of the applicable state or local building code, the market industry average practice in the state, or ECC 2009")

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[1] 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, pp. 11-14. Available at: http://www.epa.gov/sites/production/files/2015-08/documents/cpp_emv_guidance_for_demand-side_ee_-_080315.pdf