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VIA EMAIL ONLY

Dina Mackin
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Re: R.13-11-005 – Comments of the IBEW-NECA Labor Management Cooperation Committee on the CPUC Staff Workshop on AB 802 Implementation

Dear Ms. Mackin:

The California State Labor Management Cooperation Committee for the International Brotherhood of Electrical Workers and the National Electrical Contractors Association ("LMCC") respectfully submits these comments on the January 26th and 27th CPUC Staff Workshop on implementing AB 802 and the development of the Energy Division's white paper on AB 802 implementation which is scheduled for release sometime in April 2016. At the workshop, it was requested that any follow-up comments on the workshop issues be submitted to your office by February 10, 2016. The LMCC thanks the staff for convening the workshop to allow input from a diverse array of stakeholders, and appreciates the opportunity to provide input on the staff's white paper.

AB 802 increases the potential for energy savings and is essential to the State achieving its Greenhouse Gas and energy reductions goals, especially SB 350. Timely implementation of AB 802 is essential if the State is to recapture its leadership in energy efficiency.

Among other provisions, AB 802 amends Public Utilities Code section 381.2 to change the baseline for determining the energy savings resulting from IOU ratepayer-funded incentives and rebates. AB 802 now clearly authorizes program administrators to provide ratepayer-funded incentives and rebates to energy efficiency projects that bring existing buildings into conformity with, or that exceed, the requirements of Title 24 and provides that the energy savings credited to these measures may be based upon existing conditions. Prior to this bill, IOUs were not given credit for energy savings created by bringing an existing building into conformity with Title 24 requirements. They were only authorized to provide ratepayer-funded incentives and rebates to energy efficiency projects that exceeded the requirements of Title 24.

In addition, AB 802 calls for incentive programs to require better verification of the actual energy savings obtained by incentives by ensuring that they result in an overall reduction in normalized metered energy consumption.

AB 802 directs the CPUC to commence a proceeding to authorize ratepayer-funded incentives and rebates that meet these revised requirements. The proceeding is to be completed by September 1, 2016. The staff's white paper will be a key component of the CPUC authorization due in September.

I. INTERESTS OF THE CALIFORNIA IBEW-NECA LMCC

The LMCC represents over 1,000 contractors and over 30,000 electricians throughout California. These contractors and electricians are the backbone of California's indoor and outdoor building focused electrical energy efficiency industry. The LMCC has long recognized that energy efficiency requires both high standards and high quality installation practices. Deep retrofits of lighting systems, for example, are an essential component to meeting California's energy efficiency goals. Lighting systems alone account for 35-40% of a commercial building's electrical use, roughly double the energy used for cooling. Energy efficiency, however, cannot be achieved by poorly designed or installed lighting systems. Improper installation has been identified as a critical variable affecting the difference between expected and actual savings. The LMCC has been and continues to be strongly committed to workforce education, training and certification efforts that enable the quality workmanship necessary to ensure that lighting and other electrical systems function properly and provide the energy efficiency savings expected by regulators and customers.

II. AB 802 INCENTIVES SHOULD BE DIRECTED TOWARD MUSH SECTOR PROJECTS IN ORDER TO MINIMIZE FREE RIDERSHIP CONCERNS

The LMCC recognizes the challenges that the new AB 802 baseline presents to CPUC staff, particularly in implementing the new baseline in a manner that minimizes free ridership concerns. We agree that ratepayer-funds should not be used to fund energy efficiency work that would have occurred even without those funds. Because of this challenge, the LMCC recommends that the IOUs be encouraged to direct at least 40% of all incentives that use the AB 802 existing condition baseline to public sector buildings (i.e., state, county, municipal, university, schools, and hospitals) where free ridership is less of a concern. These "MUSH" sector buildings consume approximately 35% of commercial electricity use and 40% of commercial gas use, yet have been chronically underfunded over the years. They thus present a high opportunity for energy savings even by just bringing them up to current code standards.

By targeting a large portion of these incentives to public benefit projects, the CPUC will substantially reduce the free ridership concerns inherent in the new baseline standards. Free ridership is not as great of a concern for MUSH sector buildings because these buildings provide a public benefit. Accordingly, ratepayers will more directly benefit from the expenditure of their funds to reduce energy costs for these buildings.

Focusing on the MUSH sector will also allow coordination and leveraging of other funding streams, such as Proposition 39 for schools, or local school bonds to design and implement deep energy reduction strategies. Currently Proposition 39 funds are spread so thin, that many of the energy efficient retrofits identified in the Proposition 39 energy analysis end up having to be greatly scaled back due to funding constraints. But since the energy analysis and retrofit needs have already been established for many school districts pursuant to Proposition 39, these occupancies are already primed to take advantage of incentive programs stemming from the AB 802 proceedings.

An emphasis on MUSH sector projects would also be consistent with prior Commission decisions.

For example, the Commission's 2012 Guidance Decision expressly directed the IOUs to emphasize the MUSH customer sub-sector.[1]

III. LMCC SUPPORTS REQUIRING THE USE OF PROVEN M&V METHODOLOGIES BASED ON ACTUAL PERFORMANCE-BASED ENERGY SAVINGS

The LMCC strongly supports requiring measurement and verification ("M&V") of actual performance-based energy savings for all AB 802 incentive programs. Any exceptions should be limited to very small projects where M&V would clearly not be economically feasible. Such a requirement is consistent with AB 802's direction to measure incentive savings by looking at "meter-based performance."

With respect to measuring savings, AB 802 states:

> *Recognizing the already underway 2015 commission work to adopt efficiency potential and goals, the Energy Commission work on its 2015 energy demand forecast, and the <u>need to determine how to incorporate meter-based performance into determinations of goals, portfolio cost-effectiveness</u>, and authorized budgets, the commission, in a separate or existing proceeding, shall, by September 1, 2016, authorize electrical corporations or gas corporations to provide financial incentives, rebates, technical assistance, and support to their customers to increase the energy efficiency of existing buildings based on all estimated energy savings and energy usage reductions, <u>taking into consideration the overall reduction in normalized metered energy consumption as a measure of energy savings.</u> Those programs 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, as well as operational, behavioral, and retrocommissioning activities reasonably expected to produce multiyear savings.*
> (Emphasis added.)

[1] D.12-11-015, *Decision Approving 2013-2014 Energy Efficiency Programs and Budgets*.

The need for actual performance-based energy savings is well documented. Numerous studies of post-installation performance of building energy efficiency projects have demonstrated a substantial gap between expected energy savings and the savings actually realized.[2] This gap has been found to be as high as 63% of the expected energy savings.[3] A study for the California Energy Commission reported that 30-50% of new HVAC systems and up to 85% of replacement systems were installed or designed incorrectly, resulting in substantial unrealized energy savings.[4] Similar gaps between expected savings and realized savings have been found in installations of advanced lighting controls. One post-installation evaluation found that automatic day-lighting controls failed to perform as expected in 7 out of 7 tests, and occupancy sensors failed to perform as expected in 2 out of 3 tests.[5] All of the failures were due to design, installation, or calibration issues.[6] These unrealized energy savings can essentially cancel out the benefit of installing more efficient equipment.[7]

Measuring actual performance-based energy savings is also superior to calculations based on models because this is in fact how customers measure project success and are assured that they are getting their money's worth from undertaking retrofit projects. Implementing actual baselines now will greatly help in energy efficiency program promotion and uptake. One reason why today many customers undertake solar projects with their limited capital dollars, instead of much more efficient energy efficiency projects, is that solar energy reductions and cost savings take place with respect to actual, metered usage, not a hoped-for baseline.

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[2] Zabin, et al, Donald Vial Center on Employment in the Green Economy, *Workforce Issues and Energy Efficiency Programs, A Guidance Plan for California Utilities* (2014) at pp. 32-34.
[3] Energy Division, California Public Utilities Commission, *Energy Efficiency Evaluation Report for the 2009 Bridge Funding Period* (January 2011). http://www.cpuc.ca.gov/PUC/energy/Energy+Efficiency/EM+and+V/2009_Energy_Efficiency_Evaluation_Report.htm; Lutz, Al and Vishy Tirumalashett, ACEEE Summer Study Proceedings, *Measure by Measure: the Real Reasons for Gaps in Claimed and Evaluated Savings* (2012), http://aceee.org/files/proceedings/2012/data/papers/0193-000134.pdf#page=1.
[4] Zabin, et al, Donald Vial Center on Employment in the Green Economy, *Workforce Issues and Energy Efficiency Programs, A Guidance Plan for California Utilities* (2014), Appendix 2B (Evidence of Work Quality Affecting Energy Savings).
[5] *Id.*, citing Tyler, Matthew, John Farley and Eliot Crowe. Evaluation of Title 24 Acceptance Testing Enforcement and Effectiveness. PECI, September 2011. http://www.cacx.org/PIER/documents/T24_Acceptance_Testing_Final_Report.pdf.
[6] *Id.*
[7] *Id.*

With AB 802, the legislature has addressed this gap between "deemed" savings and actual savings by requiring that incentives result in significant clearly detectable impacts at the meter as demonstrated by actual reductions in metered energy consumption. The task before the Commission now is to implement this law and to close the gap between "deemed" savings and actual savings.

Unfortunately, in its recent ruling on implementing High Opportunity Energy Efficiency Programs or Projects (HOPPS) under AB 802, a CPUC Administrative Law Judge ("ALJ") held that HOPPS projects using the new AB 802 baseline could use deemed savings values in lieu of a monitoring and verification using net metered data. In our view, this violates the intent of AB 802.

In its ruling, the ALJ held that HOPPS programs using the new AB 802 baseline must result in significant clearly detectable impacts at the meter and requires a monitoring and verification plan for all HOPPS projects. For performance-based energy-savings projects, one year of net metered data is required to confirm savings and allow for capture of seasonal variation in energy consumption. For behavioral, retro-commissioning and operational projects, two years of monitoring and verification is required before the Project Administrator can claim the savings.

The ALJ, however, then created a huge exception to the monitoring and verification requirement by allowing HOPPS projects to use "deemed savings" values instead of net metered data if there are approved deemed savings values either in DEER or in Commission-staff approved work papers that are reviewed by the California Technical Forum.

The California Technical Forum is a private, utility funded "technical collaborative" that is neither public nor representative of all stakeholders. Moreover, it is dominated by the electrical utilities and utility consultants. Neither its Policy Advisory Committee nor its Technical Forum has any labor representation. Not surprisingly, the Technical Forum appears to be yet another avenue for calculating paper savings without taking into account the huge gap between these paper savings and actual savings due to issues such as poor installation and the widespread use of unskilled, unqualified and low-paid workers.

We strongly believe that this approach of allowing deemed savings in lieu of net metered data should be rejected by the Commission as inconsistent with the intent of AB 802.

IV. AB 802 WHITEPAPER SHOULD RECOMMEND IMPLEMENTATION OF QUALITY WORKFORCE RECOMMENDATIONS

The "actually-achieved" energy savings gap should be further addressed by requiring AB 802 incentives to be installed by responsible contractors using trained and experienced personnel. For example, advanced lighting controls should be required to be installed by electricians trained and certified by California Advanced Lighting Controls Training Program ("CALCTP").

CALCTP is a non-profit organization that was established in 2008 in order to increase the number of California state-certified general electricians with the knowledge, skills and abilities necessary to install, program, test, commission and maintain advanced lighting control systems in commercial facilities. CALCTP was developed in cooperation with the California Energy Commission, the California Lighting Technology Center at U.C. Davis, the California Community College Chancellor's Office—Advanced Transportation Technology Energy Campuses, Southern California Edison, Pacific Gas & Electric, San Diego Gas & Electric, the Sacramento Municipal Utility District, the National Lighting Manufacturers Association, manufacturers and both union and non-union contractors. CALCTP has certified over 4,000 advanced lighting control installers in California.

The use of CALCTP-certified installers has been found to successfully close this performance gap and to provide cost effective energy savings.[8] Evidence from six pilot studies demonstrates not only increased energy savings, but also actual customer cost savings in the range of 10-30 % for the installation of advanced lighting controls by a CALCTP-certified contractor versus a non-certified contractor.[9] Lower costs were attributed to the CALCTP training, which enables more accurate bids, faster installation, and higher system performance as a result of greater familiarity and expertise with advanced lighting controls.[10]

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[8] Zabin, et al, Donald Vial Center on Employment in the Green Economy, *Workforce Issues and Energy Efficiency Programs, A Guidance Plan for California Utilities* (2014) at p. 47.
[9] *Id.*, citing Office of the Future Landmark Square Pilot Results (Design and Engineering Services, SCE, October 2010; Office of the Future 25% Solution Assessment (Emerging Technology Solutions, December 2010) ; Advanced Office Lighting Systems (Energy Research and Development, SMUD); High Efficiency Office, Low Ambient/Task Lighting Pilot Project (Large Office) Heschong Mahone Group; Low Ambient/Task Lighting Pilot Project (Small Office) Emerging Technologies Associates; Advanced Lighting Controls System Assessment (Emerging Technology Associates).
[10] *Id.*

Such a requirement would be consistent with prior Commission guidance that has called for adopting quality workforce standards for incentive programs – guidance that has yet to be implemented.

In 2008, the Commission issued its Long-Term Energy Efficiency Strategic Plan. Among other goals, the Strategic Plan directed the IOUs to take steps to ensure "a qualified and engaged workforce to achieve California's energy efficiency and other demand-side management goals."[11] The 2008 Strategic Plan recognized that worker training is not sufficient to achieve the State's energy efficiency objectives if there are no requirements or incentives in place to use a trained and qualified resource.[12] Without such incentives, developers and building owners will continue to select workforce based on price, rather than quality.

After failing to take meaningful steps to adopting workforce quality requirements, the IOUs were ordered in D.12-11-015, *Decision Approving 2013-2014 Energy Efficiency Programs and Budgets* to develop a comprehensive approach to workforce education and training ("WE&T") requirements for the EE programs, including increasing the demand for skilled workers through skills standards and certification requirements for utility incentive program.[13] The Donald Vial Center for Labor in the Green Economy ("DVC") was selected to develop a Guidance Plan for implementing this goal.[14]

The DVC Guidance Plan identified three main paths toward increasing demand for a qualified workforce in ratepayer subsidized energy efficiency programs: (1) workforce skill certification requirements, such as CALCTP certification; (2) prevailing wage requirements – so that contractors will be chosen based on quality, not price; and (3) skilled workforce prequalification requirements based on requiring 60% of jobsite workers to be comprised of journey persons or apprentices from a registered apprenticeship program.[15] In addition, the Guidance Plan recommends adoption of responsible contractor policies to help eliminate easily

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[11] California Public Utilities Commission, *Long Term Energy Efficiency Strategic Plan: Achieving Maximum Energy Savings in California for 2009 and Beyond* (2008) at p. 74 (emphasis provided).
[12] California Public Utilities Commission, *Long Term Energy Efficiency Strategic Plan: Achieving Maximum Energy Savings in California for 2009 and Beyond* (2008) at p. 74.
[13] California Public Utilities Commission, *Decision Approving 2013-2014 Energy Efficiency Programs and Budgets* (D.12-11-015) (Nov. 8, 2012), pp. 277-278, 378.
[14] Zabin, et al, Donald Vial Center on Employment in the Green Economy, *Workforce Issues and Energy Efficiency Programs, A Guidance Plan for California Utilities* (2014).
[15] *Id.* at p. 7.

identifiable unqualified contractors (i.e., contractors without licenses, or contractors with a documented history of non-compliance with bonding, OSHA, labor or permitting requirements).[16]

For ratepayer-subsidized advanced lighting control system projects, DVC specifically recommended requiring CALCTP certification.[17] While no equivalent certification existed for HVAC installation, DVC found that those projects could be adequately addressed through prevailing wage or skilled workforce prequalification requirements.[18]

To date, however, the IOUs have not meaningfully implemented any of these recommendations. The AB 802 White Paper should recommend that new incentives under AB 802 meaningfully implement the DVC Guidance Plan workforce standard recommendations.

Such standards are particularly critical if deemed savings are to be allowed in lieu of actual meter-based monitoring and verification. While workforce quality standards should apply to all incentivized projects, at a minimum, projects that rely on deemed-savings values should be required to use a skilled and qualified workforce to better ensure that the deemed savings actually materialize. Such a requirement would be consistent with prior Commission rulings and the DVC Guidance Plan recommendations that are still waiting for implementation.

V. THE STAFF WHITEPAPER SHOULD RECOMMEND THAT THE COMMISSION AVAIL ITSELF OF EXISTING PROTOCOLS

Along with many of the parties in attendance at the January workshop, in determining actual performance-based energy savings, the LMCC supports the use of recognized, standard M&V protocol (i.e., the use of the International Performance Measurement and Verification Protocol [IPMVP]). Use of "non-standard" techniques could result in long delays, frustrating the legislature to implement actual baselines starting September 1st, 2016.

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[16] *Id.*
[17] *Id.* at pp. 7, 43.
[18] *Id.*

VI. COMMISSION SHOULD NOT AUTOMATICALLY ASSUME "REPLACE ON BURNOUT" BASELINES BASED ON DEER MEASURE LIVES

One method that CPUC staff has identified to avoid free ridership issues is to avoid funding the replacement of "burned-out" equipment that would need to be replaced with or without the ratepayer incentives. The LMCC recognizes that this is a difficult issue, but believes that the Commission should not automatically use a DEER measure life to determine "replace on burnout". As many implementers pointed out at the January workshop, and at earlier workshops, many measures, like windows and boilers and elements of lighting systems, can remain in place indefinitely. The DEER measure life does not take into account extended equipment lifespan through careful maintenance, repairs and the replacement of worn out parts. Many customers, and a majority of customers in some market segments, are not interested in energy efficiency retrofits, and use a very short payback criterion of two to three years for making an investment for energy efficiency purposed. As a result, they repair items well beyond the lives assumed in DEER.

The continued use and repair of older systems in lieu of replacement represents a huge loss of potential energy savings in the state. It is precisely this market of existing older inefficient systems that AB 802 is intending to address through the change in baseline. A blanket ban on funding assumed burned-out equipment is thus too broad of a restriction.

The Commission must address this issue by developing a reasonable decision rule on use of energy efficiency funds for replacement of systems or equipment that have exceeded their DEER measure life. The LMCC recommends that the Commission adopt a guideline that, for systems or equipment that have exceeded their DEER measure life, but whose replacement *would not* provide for payback above the cost of repair within three years, the Commission use existing meter usage as the baseline for measuring program savings. This will allow program administrators to capture the huge market of lost energy savings that currently exists due to building owners choosing to repair inefficient units rather than incurring high short-term replacement costs that will not be recuperated for 5 to 10 years, while at the same time avoiding obvious free ridership issues. Further refinements to address this concern can be evaluated and addressed as the Commission gains experience with existing meter baseline. This guideline is a more

reasonable approach than simply assuming DEER measure lives for all systems of equipment.

VII. CONCLUSION

In order to implement AB 802, the LMCC respectfully recommends that the staff white paper:

(1) Minimize free ridership concerns by directing at least 40% of incentives utilizing the new AB 802 baseline to MUSH-sector projects;

(2) Require strict compliance with AB 802's intent to verify actual savings using meter-based performance;

(3) Require AB 802 incentives to require projects to be installed by responsible contractors using skilled and qualified personnel, such as CALCTP-certified installers for lighting system projects;

(4) Recommend usage of existing IPMVP protocols to measure savings; and

(5) Not assume "replace on burnout" based on DEER lives, but adopt a guideline based on a greater than three-year payback as the criterion for program funding eligibility.

Respectfully submitted,

/s/

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