

4 December 2015

Operations and Programs Branch
NSW Department of Industry – Division of Resources and Energy
energysavings.scheme@industry.nsw.gov.au

Re: Opower comments on “NSW ENERGY SAVINGS SCHEME Rule Change Amendments”
(Consultation Paper, November 2015)

To Whom It May Concern:

Opower appreciates this opportunity to participate in the November 2015 consultation on “NSW ENERGY SAVINGS SCHEME Rule Change Amendments.” We commend the New South Wales Government (the “Government”) for continuing to lead on energy efficiency and further strengthening the New South Wales Energy Savings Scheme (ESS). The Government’s development and adoption of the Aggregated Metered Baseline (AMB) method makes Opower behavioral energy efficiency (BEE) programs eligible to generate energy savings certificates (ESCs). As an AMB stakeholder we broadly support the Government’s efforts, as detailed in the consultation paper, to improve that method and ensure it is applied fairly for M&V of gas savings.

Opower submits the following comments to request that the Government enable forward creation of certificates for activities subject to measurement and verification by the Aggregated Metered Baseline (AMB) method. Our comments emphasize the following key points:

- **Energy-saving activities subject to the AMB method are disadvantaged in relation to activities that have deemed values or give ACPs the option to create certificates in advance of program completion.**
- **Enabling forward creation of certificates via the AMB method would ensure a level playing field for all ESS activities, and remove financial barriers to investment in large-scale AMB programs.**
- **By requiring experimental program design, randomised controlled trials, and *ex-post* verification of energy-saving performance, AMB-evaluated projects have rigorous safeguards to Experimental program design, requiring randomised controlled trials, remains the global best practice for M&V of programs that use an aggregated metered baseline approach.**

We recognize that our input may go beyond the intended scope of the consultation, but it is our sincere hope that the information that follows is helpful to the Government as it proceeds with the larger effort to “increase access for the residential sector and drive the sustainable growth of the energy efficiency market.”

About Opower

Opower is an enterprise software company that is transforming the way energy retailers and distribution companies engage with their customers. Opower’s customer engagement platform enables these energy providers to reach their customers at moments that matter through proactive communications that drive energy savings and demand reduction, increase customer engagement and

satisfaction, and lower customer operation costs. Opower energy efficiency programs have been proven reliably effective, delivering over 8.2 TWh of energy savings and AUD 1.3 billion in bill savings for 55 million customers at over 95 utilities, while yielding emissions reductions of over 5.5 million tonnes of CO₂e. Having run hundreds of large-scale field tests, and been subject to at least 58 independent program evaluations, Opower has amassed the world's largest body of experience in delivering behavioural demand-side management programs.

Timing of certificate creation matters

The Government's development and adoption of the Aggregated Metered Baseline (AMB) method broadened the scope of proven, large-scale Recognised Energy Saving Activities (RESAs) eligible for ESC creation. However, the market for such methods has been slow to develop. We believe the extent to which the Government allows forward creation of certificates from AMB activities will strongly influence the market for such methods.

AMB-eligible activities that could benefit from forward creation are disadvantaged in comparison to activities that have deemed values (e.g., replacing incandescent lights with fluorescent ones). This is despite the fact that AMB ensures greater environmental integrity than deeming, given that the method awards certificates on the basis of verifiable performance, whereas deeming awards certificates on the basis of strong assumptions about likely performance. Forward creation is already a key feature for deeming savings from ESS-eligible installed-device activities (an ACP gets credit for 100% of "deemed" lifetime savings for a given installed device when its installation is certified by the Government). and PIAM&V method activities.

In the context of AMB method projects, forward creation of certificates removes financing barriers for proven, large-scale energy-saving activities by offsetting upfront costs. BEE programs generate substantially greater energy savings than a typical ESS residential activity, but they also incur higher initial costs, which limits market interest if there is an interval between investment and certificate creation.

The Government can ensure a level playing field for all activities by treating the timing of certificate creation as consistently as possible, despite necessary practical differences in the means by which savings are deemed or measured.

We therefore urge the Government to allow forward creation of certificates for AMB method projects in the ESS, to the extent that it requires rigorous *ex-post* verification and periodic true-ups.

Rigorous M&V enables prudent forward-creation of certificates

AMB methods require *ex-post* verification of savings. Compared with traditional deemed-savings approaches, this step provides a unique level of certainty that savings have occurred. Yet in practice, requiring this step before issuing credits (or otherwise recognizing savings for compliance) penalizes that additional rigor, given that months typically pass between initial program investment and the first robust measurement of program savings. This timing issue creates a financial barrier that often limits initial program size to a fraction of cost-effective potential, and in competitive retail markets such as NSW,¹ it often discourages investment in BEE altogether.

Forward creation of certificates already takes place as a matter of course in EE markets around the world – whenever an administrator “deems” energy savings up front for an installed measure such as efficient lighting. This “standardized baseline” approach to forward-crediting efficiency improvements implies a tradeoff in favor of financial certainty for the EE program implementer, at the cost of environmental and regulatory certainty (i.e., that savings will in fact occur according to assumptions for typical device usage that are embedded in the deeming formula). This tradeoff is prudent and perfectly reasonable, because in practice, a requirement to monitor usage from each energy-saving device would create an insurmountable barrier to market participation.

Within the ESS, forward creation of certificates is also allowed for RESAs subject to the PIAM&V method.

Opower submits that it is equally prudent to permit forward creation of certificates from programs designed as randomized-controlled trials and subject to *ex-post* verification and regular periodic true-ups.

Precedent for “Deem and Verify” using an AMB-type method

The US state of Michigan² applies such a hybrid “deem and verify” approach to the crediting of energy savings from BEE programs, and to our knowledge, represents its longest-standing precedent. RCT-based programs in the state that address residential behavioural energy efficiency are assumed to achieve a 1% - 3% energy efficiency improvement. This initial savings estimate is deemed based on documented results from similar programs that have been recently implemented in the same or a similar market, for the same or a similar duration. At a fixed time each year, actual savings for such a program are measured *ex-post* using RCT-based methods (comparable to the AMB method approved for ESS) to verify that the *ex-ante* deemed efficiency improvements were achieved. If verified savings exceed the initial deemed value, the state credits the program with the additional savings. If verified savings fall short of the deemed value, the state holds the BEE program administrator liable for the amount of the shortfall during the following year.

Differences in EE regulatory structure limit direct applicability of Michigan’s approach to the NSW context, but examining their model does clarify the key characteristics that we believe essential for any such “deem and verify” approach:

- Provides **consistency** with both the existing approach to forward creation via deeming and the accepted best practice for behavioral programs
- Creates **certainty** for regulatory treatment of behavioral programs similar to the certainty that applies to hardware
- Uses experimental design to **verify** savings values on an ongoing basis
- Provides a mechanism for **adjusting** savings as needed going forward

Finally, the Michigan case raises the important question of balance that comes up any time forward-creation appears in environmental markets like ESS: *How do we balance the risk of underdelivery without defeating the purpose of adopting metered baseline approaches that enable innovation and experimentation?* Following are high-level suggestions that have had resonance in similar conversations

in Michigan as well as in several European markets where deeming is the default option for crediting residential energy savings toward a compliance goal:

- Limit activities eligible for forward creation to those subject to randomized-controlled trial with a consistent track record of demonstrated energy savings at least at the 90% level of statistical confidence. (E.g., independent validation of energy savings results from at least 5 similar programs in other markets. Baseline savings forecast used for forward crediting must rely on past program performance.)
- Ensure that contractual agreements between the ACP, project sponsor (likely a retailer or DNSP), and/or AMB project implementer (e.g. Opower) include a guarantee of delivery and/or purchase of ESCs as necessary to fulfill forward obligation created at the time of certification. (E.g., As a condition of accepting forward-created certificates, ACP contractually commits to a timetable with dates for delivery and quantity of certificates for each date, up to the quantity required to meet the forward-created obligation. We believe that how this risk is allocated between ACP, project sponsor, and AMB project implementer should be jointly determined by the commercial parties to the contract, rather than prescribed by Government.)
- For unproven program types or implementers, consider requiring some portion of forward-created certificates to be held in escrow up until the time of *ex-post* verification. (E.g., ACP proposes a 3-year behavioral energy efficiency program for forward-creation of credits. 30% of forecasted ESCs must be held in escrow until the remaining 70% of the forward-created obligation has been fulfilled.)

We strongly urge the Government to consider the inclusion of provisions for forward creation of certificates for AMB method activities in the ESS for activities subject to rigorous *ex-post* verification.

We look forward to dialog on this topic and welcome questions if we can be helpful.

Thank you again for considering Opower's input into this consultation and our continued interest in participating in the ESS.

Sincerely,
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¹ The question of when to credit savings for programs that require an AMB approach is an important but less critical issue in electricity and gas markets where regulated energy providers bear the compliance obligation for meeting EE goals. For such regulated compliance entities, this timing risk is mitigated by the ability to file for EE program cost-recovery in advance of investment through a 3- or 5-year determination process.

² See Michigan Energy Measures Database: http://www.michigan.gov/mpsc/0,4639,7-159-52495_55129---,00.html