November 5, 2012

Mr. Ehren Seybert  
Energy Division  
California Public Utilities Commission  
505 Van Ness Avenue  
San Francisco, CA 94102

Re: Post-Workshop Comments of Southern California Edison Company on Phase 1 of the Net Energy Metering Cost-Benefit Study

Dear Mr. Seybert:

On May 30, 2012, the California Public Utilities Commission (Commission or CPUC) issued Decision (D.) 12-05-036, which orders the Energy Division, among other things, to prepare an updated Net Energy Metering (NEM) cost-effectiveness report to be completed no later than October 1, 2013. On September 27, 2012, the Governor signed Assembly Bill (AB) 2514 (Bradford, 2012) into law, which requires the Commission to conduct a study of NEM by October 1, 2013, and determine who benefits from, and who bears the economic burden, if any, of the NEM program. In addition, AB 2514 requires the Commission to determine the extent to which each class of ratepayers and each region of the state receiving service under the NEM program is paying the full cost of the services provided to them by electrical corporations, and the extent to which those customers pay their share of the costs of public purpose programs.

The Energy Division contracted with Energy and Environmental Economics, Inc. (E3) to complete the NEM study. Subsequently, on October 22, 2012, the Energy Division hosted a public workshop to discuss the revised scope of work and E3’s proposed methodology for conducting the NEM study. The Energy Division invited parties to submit informal comments on Phase 1 of the NEM study. In response, Southern California Edison Company (SCE) submits these post-workshop comments.

A. PHASE 1 SCOPE OF WORK (SOW)

Consistent with the requirements of D.12-05-036 and AB 2514, Phase 1 of the NEM study will evaluate the ratepayer impacts of NEM for all participating eligible technologies as of the end of 2011. Accordingly, the ratepayer impact measure (RIM) test for distributed generation adopted in D.09-08-026 will be used for the evaluation. Similar to the 2010 NEM Study that E3 conducted, the current NEM study will not evaluate the overall societal value of renewable distributed generation under NEM.

Furthermore, the SOW indicates that the dataset will be expanded to include NEM customers and billing data through December 31, 2011. SCE believes using the set of NEM customers through December 31, 2011, is appropriate, even though the Net Surplus Compensation Rate (NSCR), which compensates NEM customers for energy produced in excess
of their onsite load over their relevant period, did not take effect until January 1, 2011, and the full impact of the NSCR on participating customers is not realized until 2012. Because of this, SCE recommends that E3 include 2012 NEM billing data in the NEM study to the greatest extent possible.

B. DATA

E3 began collecting data in July 2012 by sending data requests to the investor owned utilities (IOUs). The data requested consists of gross load and NEM generator output interval data for all available customers, billing data and billing costs for all NEM customers, and ratepayer-borne interconnection costs. SCE generally supports E3’s use of the identified data in the NEM study, with the exceptions noted in Paragraphs A and C of this communication.

C. METHODOLOGY

As stated in its presentation to the stakeholder workshop on October 22, 2012, by its research, E3 will attempt to answer the question, “What is the cost of NEM to ratepayers?” To accomplish this goal, E3 plans to use data from the IOUs to: (1) construct hourly gross load, gross generation output, and net consumption; (2) calculate bills with and without NEM; (3) calculate/assign other NEM costs; (4) calculate utility avoided costs; and (5) calculate net costs. In order to attempt to quantify a counterfactual case without the existence of NEM, E3 plans to use the following two approaches: (1) the export-only approach similar to the 2010 study, which evaluates only power exported to the grid and assumes behind-the-meter consumption/production is unchanged by the existence of NEM; and (2) the all-generation approach as ordered by AB 2514, which evaluates all power generated and assumes no generation would have been installed without NEM. SCE generally supports E3’s methodology, but has the following concerns:

1. Some of the charts in the workshop presentation are different from those in the SOW — specifically in the Avoided Costs section. The workshop charts use 2017 as the Resource Balance Year, but the SOW states that a post-2020 Resource Balance Year would be used in the base case. SCE agrees with the use of a post-2020 Resource Balance Year, because the Resource Balance Year should be determined with energy efficiency but without NEM generation in the base case analysis. Thus, SCE supports using a post-2020 Resource Balance Year in the base case analysis.

2. The Lost Standby Charge Revenue should be considered in the NEM base-case analysis and not as a part of the sensitivity test. IOUs bear real costs associated with transmission and distribution (T&D) infrastructure in addition to generation energy and capacity to backup and serve customer loads that are expected to be covered by their NEM generators, but IOUs cannot collect the costs for these services due to exemptions in the NEM tariff. Instead, sensitivity tests should only be used for parts of the study that may be contentious.

3. The NEM study should account for avoided standby costs for residential customers. Without the NEM program’s prohibition against standby charges,
SCE would likely develop a standby tariff for residential NEM customers to account for SCE’s costs incurred to provide standby and backup service to these customers during times when these customers’ distributed generation (DG) does not adequately serve their load.

4. SCE recommends the inclusion of specific rate structures as part of the sensitivity tests. Most importantly, the steep inclining block rate structures applicable to the California IOUs’ residential customers have led to retail rate offsets far above avoided cost levels. Quantification of the differences between current rates, pre-energy crisis rate levels, and cost-based rate levels that include fixed cost grid components would not only help inform the NEM discussions but also help inform the open Residential Rate Design Order Initiating Rulemaking (R.12-06-013). SCE would also like to see the non-residential rate structure sensitivities associated with its option R rates; SCE has committed to use any information from this cost-effectiveness study to inform its opinion regarding the modification and/or expansion of the option R rates in an upcoming rate design window application scheduled to be filed in December 2013.

5. E3 should make sure not to double count avoided greenhouse gas (GHG) related costs as part of avoided generation/energy costs. Specifically, since the renewables portfolio standard (RPS) adder adds an RPS premium to a percentage (i.e., the relevant RPS target) of the avoided energy costs, an equivalent percentage of the GHG costs should be subtracted from the avoided GHG costs in order to avoid double counting of avoided GHG. It’s not clear if E3 considers this potential for double counting in the avoided cost model.

6. E3’s DG avoided cost calculator does not properly measure avoided T&D costs, because the E3 calculator allocates T&D capacity cost savings based upon temperature. Temperature is a sub-optimal proxy for circuit loads, especially when actual circuit load profiles are available. Specifically, many of SCE’s residential circuits peak in the evening after residents return home but well after temperatures reach their maximum values during the early/mid-afternoon hours. Thus, the avoided T&D capacity allocation factors that E3 is using can be improved upon (see also the Additional Recommendation section below). The cost-effectiveness study should also explicitly differentiate between T&D marginal costs that are typically included in the IOUs’ general rate case (GRC) proceedings and the avoided costs that should be used in the cost-effectiveness study. Avoided T&D costs are lower than marginal cost because a utility service would still be required to connect the customer to the grid regardless of any reduction in demand. The addition of a new customer would involve additional wires and poles, while these costs would not be avoided due to DG. For example, the benefit of DG may be the ability of the utility to defer a transformer upgrade though the fixed grid cost components will remain unchanged. SCE uses information from the GRC distribution marginal cost study to calculate avoided cost by removing the cost of poles, wires, land, buildings, as well as the operations and maintenance (O&M) related to these (fixed) distribution facilities. The value E3 is using contains an error by including these O&M costs, thereby
overstating the avoided T&D cost by 100 percent. SCE also recommends updating the various cost components using the most recent available data (e.g. SCE’s 2012 GRC). Some parts of SCE’s distribution system are not growing, thus no need currently exists to upgrade these circuit capacities for the foreseeable future. The CPUC cost effectiveness protocols for Demand Response recognize this and include a D-factor to adjust for the requirement that demand side resources be subject to the “right place” test. E3 should adopt the same methodology in the NEM study.

D. ADDITIONAL RECOMMENDATIONS

Before the October 22, 2012, public workshop, SCE presented E3 a study titled “Coincidence of Solar Production with SCE’s System Load and Distribution Circuits,” (Coincidence Study) for consideration in the NEM study. The purpose of the Coincidence Study was to investigate the coincidence of solar production with SCE’s system load and SCE’s distribution circuits, which can be used to determine the T&D avoided costs. The coincidence correlates with the effectiveness of residential and commercial and industrial (C&I) solar production in reducing the system peak load or in dampening the load on distribution circuits that serve solar or NEM customers. The Coincidence Study leads to the following conclusions:

1. The production of solar energy peaks at 1:00 p.m. Pacific Standard Time (PST). In 2010, SCE’s system usually peaked between 3:00 p.m. and 4:00 p.m. When SCE’s system peaked, the solar production reached between 57 and 78 percent of its maximum as measured at 1:00 p.m. This is consistent with a study performed by Itron using SCE data for 2006.

2. SCE’s NEM circuit study revealed that the residential solar circuits peaked at or after 6:00 p.m. At that time, the solar production on those circuits accounted for between one and nine percent of the maximum solar production measured at 1:00 p.m. However, C&I solar circuits are more coincident with system peak between 3:00 p.m. and 4:00 p.m. so that, at the peak of these C&I circuits, the solar production reached between 56 and 78 percent of its own maximum measured at 1:00 p.m.

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1 E3 independently added O&M to the avoided T&D values SCE provided in a data request.
2 Decision 10-12-024, Decision Adopting a Method for Estimating the Cost-Effectiveness of Demand Response Activities
3 All time references are in PST.
4 Due to temperature impacts and panel orientation, rarely will PV system’s output actually meet their nameplate rating.
6 Criteria used to selected representative solar circuits were highest number of residential solar customers and a combination of the ratio of NEM capacity to the circuit’s maximum demand with the number of solar customers on the circuit.
3. These facts reveal that C&I solar customers alleviate the system peak load, as well as the peak load on some C&I distribution circuits, in a significant way. Those peaks occur in the middle of the afternoon when solar production is significant, but not the highest. On the other hand, residential solar customers mitigate the peak load on their distribution circuits to a minor extent, because residential circuits peak in the evening when solar production is very low or close to non-existent. Similar results were also shown in Itron’s Self-Generation Incentive Program Year 6 study, Table 1-4. Itron’s 2007 study showed a 6 percent reduction to residential circuit peaks and a 46 percent reduction to C&I circuit peaks.

4. SCE recommends that E3 properly take into account these studies when treating avoided T&D costs due to the NEM program, and show avoided T&D costs by residential and non-residential customers separately.

5. Lastly, AB 2514 requires the Commission to determine the extent to which each class of ratepayers and each region of the state receiving service under the NEM program is paying the full cost of the services provided to them by electrical corporations, and the extent to which those customers pay their share of the costs of public purpose programs.

SCE appreciates the opportunity to provide these comments on the Phase 1 SOW for the NEM study.

Due to the impact of the NEM program and this report on the IOUs’ operations and policies, SCE requests that the Energy Division conduct a conference call with the IOUs before releasing the draft results of the NEM study.

Southern California Edison Company

/s/ Russell Garwacki
Russell Garwacki

cc: Melicia Charles, CPUC Energy Division