March 18, 2011

California Energy Commission
1516 Ninth Street
Sacramento, CA 95814-5512

Re: Docket No. 11-IEP-1 2011 Integrated Energy Policy Report Draft Staff Paper - Proposed Method to Calculate the Amount of New Renewable Generation Required to Comply with Policy Goals

San Diego Gas & Electric Company (SDG&E) respectfully submits the following comments on the Draft Staff Paper (Paper) entitled, "Proposed Method to Calculate the Amount of New Renewable Generation Required to Comply with Policy Goals," CEC-200-2011-001-SD, prepared in support of the Energy Commission's (CEC) *2011 Integrated Energy Policy Report (IEPR)*. SDG&E assumes the methods of forecasting each of the elements of the renewable net short are the same as the CEC staff intends to use in its IEPR forecasts in general. As mentioned in the workshop, the comments are not intended to address the forecast values specific to the renewable net short, but only the forecast methodologies that will be the basis of the renewable net short in particular and the 2011 IEPR general.

Retail Sales and Energy Efficiency Interaction

Even though the Paper recognizes that uncommitted energy efficiency (EE) is uncertain, it should go further and emphasize that only EE that is cost-effective, reliable, and feasible can be considered for resource planning purposes (California Public Utilities Code, Section 454.5 (b)(9)(C)). For 2009 IEPR and for the 2010 LTPP, the uncommitted EE that was and is being

considered that is not already included in the retail sales forecast is highly uncertain. Therefore, the uncommitted EE in this proceeding (or any other resource planning proceeding) should not be used to adjust retail sales until a full public vetting of the assumptions behind the CEC's retail sales and uncommitted EE forecasts are completed. This vetting should include, but not be limited to, discussion on various assumptions that determine the amount of cost effective EE potentially available in the long-term, the amount of "naturally-occurring" EE, and past and future EE program impacts for both IOUs and POUs. The base case forecast of uncommitted EE should be revised downward and the low range case should be zero, matching the approach used for rooftop PV and CHP.

Distributed Generation

As the Paper correctly notes, distributed generation impacts the renewable net short differently depending on whether the energy is used behind the meter or exported to the grid. The assumption explicitly made is that distributed photovoltaics (PV) developed pursuant to Senate Bill (SB) 1 will not export to the grid, and that the renewable energy credits (RECs) generated are not counted toward the Renewable Energy Portfolio (RPS) targets. On the other hand, the exclusion of distributed renewables developed pursuant to other programs identified on page 17 of the Paper assumes that the renewable energy generated under these programs is completely exported to the grid. Neither of these assumptions is probably correct; the percent used onsite is a pure guess since a tradable REC market has not yet developed and the CEC has not developed rules for counting small PV toward the RPS.[1] Because of the lack of data, the current staff assumption is probably acceptable; but it should be revisited in the next IEPR when CEC rules have been modified and the tradable REC market has developed.

Combined Heat and Power

The Paper at pages 18-20 calculates the amount of Combined Heat and Power (CHP) generation produced and used onsite based on the assumptions of 2240 MW of installed new CHP, a capacity factor of 73.8 percent, and 50 percent of the electricity being used onsite. The Paper states that the range of CHP additions is based on both the AB 32 Scoping Plan and the 2009 Market Assessment Report. However, it should be noted that the AB 32 assessment was derived from an earlier CEC report that the 2009 Market Assessment Report replaces. The Paper makes the assumption that the amount of CHP will be at the lower end of the range. The assumption seems reasonable at this time given the market potential in the 2009 Market Assessment Report does not consider space limitations, significant permitting issues, and the minimal GHG reductions from small onsite generation. [2]

However, the Paper implicitly makes inconsistent assumptions. In the base case from the 2009 Market Assessment Report, over 90 percent of CHP generation is used onsite.[3] The use of the 50 percent assumption in the Paper is more consistent with a mix of export CHP and onsite CHP, a reasonable assumption.[4] A mix of export and onsite CHP would produce a higher capacity factor than assumed in the Paper. Staff should assume a capacity factor close to 82 percent to be consistent with a mix of small and export CHP implicit in the 50 percent use onsite.

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[1] See SDG&E comments in the CPUC proceeding A.10-03-017 implementing AB 920 that develops a net surplus compensation rate for excess generation of utility net energy meeting customers.
[2] The CEC adopted a *minimum* 62% efficiency for AB1613 to assure GHG reductions from new CHP. The Market Assessment Report shows effective *average* efficiency in the base case to be 62.4 percent.
[3] CEC-500-2009-094-F, Figure 31, page 77.
[4] CEC-500-2009-094-F, Figure 31, page 82. Using the export case with pricing yielding a 5 year payback, the 2009 Market Assessment Report estimates a market potential of 1400 MW of export CHP in 2029, which would be somewhat less in 2020.

Existing Renewable Electricity

The Paper presents the astounding finding that the amount of existing in-state renewables could vary by more than 12,200 GWh (Table 5). These are renewable that are currently built or under construction. The wide range for the amount of existing renewables is based on two poor methodological assumptions. First, the historical method ignores renewables under construction. Since the renewable net short is for 2020, the implicit assumption is that those renewables currently being constructed will be abandoned or have no output -- clearly not a plausible assumption. This assumption is faulty and should be revised to include a reasonable estimate of output from renewables under construction.

The second faulty assumption is that existing intermittent renewables, including wind and solar, will perform in 2020 as they did in the last year of production. Since these are intermittent resources, their output varies from year to year depending on conditions. Since 2020 retail sales are based on a statistically determined average year, the output of intermittent renewables should be based on average year conditions as well. That approach is taken for small hydro, where the projected output is based on a 5 year average, as shown in Table 5. The Paper explicitly acknowledges 2009 was a poor wind year with a reduction of 800 GWh from 2008 levels in spite of an increase in wind capacity of 280 MW (Paper at page 24).

For this reason, the Paper's methodological assumption should be revised. For purposes of determining a 2020 net short for renewables, average year conditions should be represented using capacity factors based on historical experience (or contract amounts if there is insufficient historical data).

Renewable Net Short Range

SDG&E notes that the range for the renewable net short is artificially wide because it ignores statistical correlations with economic growth. The amount of energy efficiency is highly correlated with economic growth as demonstrated in Table 1 of the Paper, where the CEC forecast for the 2009 IEP was for 34,700 GWh under the assumption of higher economic growth. Under lower economic growth, the amount has been reduced to 17,100 GWh with the same aggressive energy efficiency approach in the state. Likewise, new combined heat and power facility are dependent on economic growth since new industrial and commercial facilities are necessary to provide opportunities for greenfield CHP projects. And since rooftop PV is more economical on new construction that retrofits, there is likely a correlation of the amount of PV with economic growth. The discussion of Table 7, at a minimum, should point out the low likelihood of the statistical independence of assumptions used to develop the range (e.g., low EE and low CHP simultaneous with high economic growth).