PG&E's Responses to Energy Division's Technical Questions

Q1. Are there any technical errors in the proposed scenarios, scenario tool, or 33% RPS Calculator? For any alleged errors, please be very specific in your comments including the location of the error and the correct value, including the source for the revised value. If appropriate, please provide a revised spreadsheet showing any corrected values. Some example questions to consider in identifying factual errors are:

a. Are any resources double counted or inappropriately left out of the analysis?

b. Are any numbers cited in the proposed scenarios or spreadsheets inaccurate relative to the intended sources?

c. Are there any errors in the renewable generation project data in the 33% RPS Calculator?

A1.a)

1) The Assigned Commissioner's Ruling (ACR) defines the criteria for including a project as a known or planned addition as follows: "Known Additions are resources that have a contract in place, have been permitted, and have construction under way. Criteria for Planned Additions are resources that have a contract, but have not yet begun construction." PG&E notes that including Avenal as a Known Addition in the *'SitingCases mod'* tab conflicts with these criteria since, PG&E is not aware of the Avenal generating unit as having a contract.

2) With respect to import limits, PG&E believes that out-of-state RPS resources that utilize transmission capacity on the interties may be double-counted in the analysis since they are included both in the "RPS Resource Additions" line item as well as the "Imports" line item. This double-counting issue provides further justification for a more conservative import limit than the current "Base" assumption of using the CAISO's Maximum Import Capability (MIC) of 16,459 MW. As described in further detail in PG&E's Workshop Comments, the assumption should be changed to the lower "CEC" imports.

A1.b)

1) There are different Unmanaged Loads (MW and GWh) shown in different LTPP documents, yet they appear to be used for the same purpose. With Peak Capacity as an example:
   - The 6/27/12 ACR on Standardized Planning Assumptions identifies the Load to be 55,951 MW for the Mid Scenario in 2022.[1] This is from CEC Form 1.3.
   - The Scenario Tool developed by the Energy Division lists 57,228 MW for the Mid Scenario in 2022.[2] This is from CEC Form 1.5.
   - The above notwithstanding, PG&E believes the correct load to use most likely should come from CEC Form 1.5b, which represents the ISO Coincident Peak, and is 54,895 MW for the Mid Scenario in 2022. This is also the CEC Form that was used in the 2010 LTPP.

2) For CHP, the proposed scenarios appear to have drawn statewide numbers from the source documents. This overstates the forecast, as it includes significant CHP expected outside the planning areas of the three IOUs.

A1.c)

1) The updated RPS Calculator includes an error in the updated *'i – CommProjData'* tab. The projects formerly listed as PG0718A and PG0718B (solar thermal projects each with 125MW capacity) are now listed as PG6000 and PG6011 and are 250MW each. This mistake overstates the available capacity from these projects, and thereby prevents other commercial projects from being selected in the calculator.

Q2. Staff has assumed a resource with no current COD estimate in the Energy Commission's list of siting cases (http://www.energy.ca.gov/sitingcases/ALL_PROJECTS.XLS), but meeting other criteria, would be online by 2017. Is this a reasonable assumption? If not, please provide a year and justification.

A2. PG&E does not have a suggested alternative to the CPUC's assumption of 2017 as the online date for resources with no current COD estimate in the CEC's list of siting cases. PG&E does note that the CEC has updated the Facility list

[1] ACR 6/27/12, at p. 11

[2] Scenario Tool, Scenario Tool v1ci RPS.XLSX, Assumptions tab; cell M6

subsequent to the version being used in the Scenario tool. PG&E suggests that the latest version of the Energy Commission's list of siting cases (http://www.energy.ca.gov/sitingcases/all_projects.html) be used of the 2012 LTPP. One resulting change is that the Tracy Combined Cycle – GWF is now shown as 9/2012 rather than as N/A. In addition, as the scenario tool is targeted towards the representation of summer loads and resources, PG&E suggests that new additions projected to occur June 1 or later of a given year, be considered in the scenario tool as available in the following year. For example, the Tracy Combined Cycle – GWF, shown with a current on-line date of 9/2012 would be designated as 2013 for purposes of supply and demand balance.

Q3. If Staff could not locate a COD for an existing resource, Staff assumes a COD of 1/1/1980. Is this a reasonable assumption? If not, please provide a year and justification from a public source.

A3. PG&E has no comment at this time.

Q4. Is it appropriate to group renewable resources such as geothermal or biomass in with conventional generators for purposes of estimating resource retirements?

A4. Biomass and geothermal resources should be considered along with wind and solar technologies for purposes of assumptions on resource retirements.

To the extent fixed timeframes are used to determine resource retirements, the renewable resource technologies of Biomass, Geothermal, Wind and Solar should be considered as a group. To analyze a scenario that includes a potential retirement of renewable resources it makes sense to consider them as a group.

PG&E also notes that any retirements of resources that count towards meeting the RPS requirement will require a modification of the "net short" used to determine the amount of new RPS resources. Given this required modification, the potential retirement of renewable resources will not appreciably affect the magnitude of energy from renewable generation, but only a change in the potential proportion of energy from various technologies. The various choices of RPS portfolios already capture a range of potential portfolios. For these reasons, PG&E recommends that units using Biomass and Geothermal technologies should be considered with and have the same retirement assumptions as wind and solar. As "renewable" retirements using the low assumption, this would have these units considered to be repowered at end of life.

Q5. Is a 19% conversion from nameplate small PV capacity to peak production appropriate? If not, what data source and method publically available should be used for this calculation?

A5. It is difficult to answer this question as stated. It does not appear that 19% was used to convert nameplate PV to peak capacity. It appears 19% was used to convert installed capacity to GWh, where installed capacity is measured using the CEC-AC System Rating[3] (i.e., post-inverter). As such, it is appropriate. Further, PG&E also believes that the 75% used to convert installed MW of non-PV customer generation is within the range of what one would expect.

PG&E has additional comments on how peak production is calculated. Specifically, it appears that 100% was used as the capacity factor to convert installed MW to peak production MW for both incremental PV and incremental non-solar PV. (Again, installed PV is measured CEC-AC, not nameplate capacity.) Use of 100% as a capacity factor will overestimate the generation available at peak. PG&E notes that the CEC used a capacity factor of about 50% to convert installed MW to peak MW for solar; and also notes that the CEC used about 70% to convert installed MW of non-PV generation to GWh. PG&E suggests the CPUC adopt capacity factors at or below the CEC's values.

Q6. Please provide a prioritization of staff's proposed scenarios and portfolios, and briefly (no more than 1 page) explain the rational for this prioritization.

A6. Please see Section IV of PG&E's 9/7/2012 Comments on the August 24, 2012, Energy Division workshop.

[3] Installed MW of PV are measured using the California Energy Commission's Alternating Current (CEC-AC) method to measure nominal output power of photovoltaic cells or modules to determine the system's rating in order to calculate the appropriate incentive level.