BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Integrate and Refine Procurement Policies and Consider Long-Term Procurement Plans.	R.13-12-010 (Filed December 19, 2013)

RESPONSE OF CALPINE CORPORATION TO KEY TECHNICAL QUESTION ON THE DECEMBER 18, 2013 WORKSHOP ON PLANNING ASSUMPTIONS AND SCENARIOS FOR USE IN THE CPUC 2014 LONG TERM PROCUREMENT PLAN PROCEEDING AND THE CAISO 2014-2015 TRANSMISSION PLANNING PROCESS

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Pursuant to the December 19, 2013 Administrative Law Judge Ruling ("*ALJ Ruling*"), Calpine Corporation ("Calpine") submits the following responses to the *Key Technical Question for Parties in Response to December 18, 2013 Workshop on Planning Assumptions and Scenarios for use in the CPUC 2014 Long Term Procurement Plan Proceeding and the CAISO 2014-2015 Transmission Planning Process* ("*Workshop Planning Assumptions and Scenarios*").[1]

I. INTRODUCTION

Calpine supports the efforts of the California Public Utilities Commission Energy Division Staff ("Staff"), the California Energy Commission and the California Independent System Operator ("CAISO") to develop reasonable planning assumptions and scenarios on which to base the next rounds of modeling in the Long-Term Procurement Plan proceeding ("LTPP") and the Transmission Planning Process ("TPP"). Calpine believes the *Workshop Planning Assumptions and Scenarios* are, for the most part, reasonable. As discussed below, however, Calpine has identified three flaws in the planning assumptions and scenarios that should be corrected prior to any modeling being performed.

[1] The question numbering in Calpine's response is consistent with the question numbering in the *ALJ Ruling*. Calpine has not included questions that it is not addressing in its Comments.

First, the apparent assumption that distributed generation ("DG") will be the most cost-effective means of meeting post-2020 environmental goals is unsupported. DG *may* be the most cost-effective approach to satisfying such goals, but in order to determine whether it is cost effective, DG must be tested against other options and approaches, including approaches that rely more heavily on grid-scale renewable generation. Given the range of potential post-2020 environmental policies, it is prudent to consider a broader range of such options in this LTPP, particularly in light of the fact that the assumptions developed in this proceeding will be used in the TPP, where different assumptions about the development of renewable generation may have profound implications for transmission development.

Second, the proposed treatment of energy storage (as well as other new operationally flexible resources besides conventional generation) in the planning assumptions and scenarios could lead to sub-optimal procurement decisions. As suggested by Staff's questions below, the inclusion of storage and other new operationally flexible resources in planning assumptions and scenarios requires assumptions about the precise locations and operating characteristics of storage. Rather than relying on such assumptions, the LTPP and TPP modeling should be used to determine the optimal locations and operating characteristics for storage and other new operationally flexible resources besides conventional generation so that such resources can be developed as efficiently and cost-effectively as possible.

Third, assumptions about existing renewable generation should reflect more realistic projections of performance degradation/decline, especially for existing geothermal resources, which may not have contracts that support the investment required to maintain their output at current levels.

II. RESPONSES TO QUESTIONS

1. Is the current range of scenarios sufficient to cover current policy issues facing the CPUC?

Two of Staff's proposed scenarios include expanded Renewable Portfolio Standard ("RPS") requirements: a 40% RPS Scenario and an Expanded Preferred Resources Scenario. Both of these scenarios assume that expanded RPS requirements will be fulfilled with portfolios of resources containing relatively high amounts of DG. Calpine believes that the cost-effectiveness of DG to satisfy environmental policy goals must be tested against alternative options and approaches rather than simply assumed. Accordingly, Calpine recommends the inclusion of scenarios that achieve the same RPS goals but with grid-scale renewables. At a minimum, the scenarios should include a 40% RPS non-DG scenario. This scenario would be identical to the Trajectory Scenario, but would rely on the Commercial Interest version of the RPS calculator to derive a 40% (rather than 33%) RPS portfolio. For similar reasons, there may also be merit in considering a version of the same scenario that removes DG additions from the load forecast.

4. Is the treatment of energy storage for capacity value reasonable?

See response to question 7 below.

5. For existing resources that do not have announced retirement dates, Staff may assume a resource retires based on facility age. Facility age is calculated from Commercial Online Date, but the COD may not be available for some resources. If no COD is available, is it reasonable to assume the resource does not retire within the planning horizon? If not, please provide an alternate methodology and justification from a public data source as needed.

Staff assumptions about resource retirements may fail to account for expected performance degradation/production declines for renewables. For geothermal resources in particular, in the absence of contracts that support significant re-investment in existing resources, production from such resources may decline significantly over the planning horizon.

6. How should the capacity value of energy storage, demand response, and demand side resources (PV, CHP) be allocated to small geographic regions and/or busbars and how should the capacity value be adjusted to account for locational and operational characteristics uncertainty?

See response to question 7 below.

7. Decision (D.13-10-040) established storage goals for each of three categories – transmission, distribution, and customer-side of the meter, but does not specify the function(s) to be provided. Should storage modeling be focused on deep multi-hour cycling to support operational flexibility or rapid cycling for ancillary services? How should the production profile of each category of storage identified in the CPUC Storage Target Decision be modeled – as a fixed profile or as a dispatchable resource?

As noted above, Staff proposes to include storage and other operationally flexible resources such as DR in their proposed scenario assumptions. Including such resources in the scenario assumptions requires that the resources' locations and operating characteristics be specified as well. Instead, Calpine recommends excluding such resources from the scenario assumptions so that the modeling can identify the best, most valuable locations and operating characteristics of energy storage and other resources. As noted by Staff, two questions that the

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LTPP scenarios seeks to address are "[w]hat operational characteristics (*e.g.*, ramp rates, regulation speeds) are needed in what quantities?" and "[a]re these needs location specific?"[2] It is unclear how the modeling can address these questions if the answers are assumed ex ante.

By: /s/

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[2] *Planning Assumptions and Scenarios for use in the CPUC 2014 Long-Term Procurement Plan Proceeding and CAISO 2014-15 Transmission Planning Process* http://www.cpuc.ca.gov/NR/rdonlyres/BBBC162E-53FB-4AB8-BE26-A3C9E2D3B5E8/0/PlanningAssumptionsandScenariosWordDocument122613update.docx, at 19.