



## Comments of Pacific Gas and Electric Company on the Draft CAISO 2014-2015 Study Plan and February 27, 2014 Stakeholder Meeting

Submitted by	Company	Date Submitted
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### Comments

PG&E submits these comments on the Draft 2014-2015 Study Plan and February 27, 2014 stakeholder meeting. We look forward to continued participation in the process, and appreciate the significant work that the CAISO staff put into developing this year’s Draft Study Plan.

### Public Policy Objectives (Section 3.1)

PG&E supports the CAISO’s inclusion of public policy objectives as factors that influence the transmission planning process. However, PG&E is unclear why the only public policy objective identified in this section is the 33% RPS. Examples of other public policy objectives that should be considered for inclusion:

- State Reliability Directives or Standards
- Grid Security Directives or Standards
- CPUC Storage Order / AB2514

### Reliability Assessments (Section 4)

With reference to Section 4.6, Table 4-1 of the study plan, PG&E appreciates the CAISO’s inclusion of a Spring Peak system condition for the Northern California Bulk System assessment. However, since the Spring System condition is also critical for North Valley and Central Valley for any potential reliability issues, PG&E requests the CAISO to include the Spring Peak System condition assessment for the North Valley and Central Valley area as well.

With reference to Section 4.9, specifically the Generation Retirement assumptions, PG&E agrees with the general assumption of resource retirement at an age 40 years or more. However, PG&E also recommends a “High QF Retirement” scenario similar to the LTPP high scenario be studied as part of this year’s planning process. This scenario will analyze any reliability impacts caused by QF’s potentially retiring at an age of 30 years. PG&E feels this is an important scenario to be considered as there is great uncertainty regarding the future for each one of these plants. While it

is possible that some of these units could remain as market generation, it is important to fully understand the potential impacts created in certain pockets of the system in the event some of these units do retire.

With reference to Table 4-3, PG&E would like to request clarity on the “Final Capacity, if Already Repowered or Under Construction” column of the table and how the information in the column should be used for OTC retirement assumption.

With reference to Section 4.19, PG&E appreciates the CAISO’s effort to analyze the Voltage Stability and Reactive Power Margin Analysis for the areas that have voltage and reactive margin concerns. One area that needs to be fully analyzed for any voltage and reactive margin concerns is the Bay Area and it should be added to the study list.

With respect to the baseline RPS portfolios described in Section 4.9, PG&E notes that the RPS Calculator only includes the under development contracts that are signed through annual RPS RFO or bilateral negotiation from the August 2013 PDSR. PG&E contracts that were signed through RAM and PV RFO were not included. PG&E previously noted this same exclusion in the 2013-2014 Transmission Planning Process. PG&E acknowledges that these contracts are accounted as a reduction through the Renewable Net Short (RNS). However, PG&E urges the CAISO to work with the CPUC to ensure that all signed, commercial contracts are incorporated into the baseline portfolios for transmission planning purposes, if those contract details were provided through the PDSR to the CPUC.

Specifically, PG&E discovered the following discrepancies:

- 15 RAM projects (275 MW total) are in Aug PDSR but not included in the Calculator
- 3 PV RFO projects (42 MW total) are in Aug PDSR but not included in the Calculator

#### **Demand Response Programs and Energy Storage (Section 4.17)**

With respect to storage (Section 4.17.3), PG&E supports the informational analyses CAISO has committed to developing during the 2014-2015 transmission planning process. PG&E believes these will be helpful in identifying areas where storage may provide benefits to the transmission system; however, PG&E believes the informational analysis needs to be accompanied by procedural and/or tariff changes to accommodate “dual use” storage assets (i.e. assets that act as market assets part of the time, and partially rate based transmission assets at other times). See Section 6.2 below for additional comment on this topic.

With respect to the proposed methodology for inclusion of demand response resources in the 2014-2015 transmission planning process, PG&E supports the inclusion of existing “fast-response” demand response resources as discussed in the draft study plan to mitigate transmission constraints. PG&E encourages the CAISO to further develop methodologies and engage with stakeholders to understand how inclusion of demand response resources can be expanded to include non-“fast response” resources. These non-“fast-response” resources as a stand-alone resource or bundled with other resources may also have significant value in mitigating transmission reliability concerns.

## **San Francisco Peninsula Extreme Event Assessment (Section 6.1)**

PG&E supports the special study plan outlined by the CAISO for the San Francisco Peninsula. PG&E reiterates previous comments urging thorough and expedient completion of the studies identified resulting in a recommendation no later than the 2014-2015 transmission planning cycle.

PG&E does not oppose a CAISO stakeholder working group (including relevant government agencies) as suggested by other stakeholders to provide input into the CAISO process, provided the scope of the working group is clear and does not impact the timing of the CAISO's analysis and recommendation.

## **Preferred Resource and Storage Evaluation Technical Studies (Section 6.2)**

PG&E supports the CAISO's movement to more fully consider the ability of non-conventional resources to mitigate identified deficiencies in local areas and strongly encourages the inclusion of non-conventional resources that offer a cost-effective and reliable alternative to conventional transmission. PG&E has been forthcoming in the planning process and provided extensive locational data to aid the CAISO in its planning process, and we strongly encourage the CAISO to consider that information in their unified planning assumptions.

PG&E reiterates its comments on the draft 2013-2014 Transmission Plan, which state that:

The CAISO should complete its stakeholder process for laying out the rules for non-conventional resources to meet transmission needs. Since stakeholders provided comments on the CAISO's White Paper on Non-Conventional Alternatives (<http://www.caiso.com/Documents/Paper-Non-ConventionalAlternatives-2013-2014TransmissionPlanningProcess.pdf>) issued on September 4, 2013, the CAISO has not provided further information or instructions to the stakeholders on key implementation issues. In the context of the State's Loading Order, the CAISO should adopt preferred resources if they can provide comparable reliability to the conventional approach in a more cost-effective manner consistent with PUC code section 454.5(C) which states that: *The electrical corporation shall first meet its unmet resource needs through all available energy efficiency and demand reduction resources that are cost effective, reliable, and feasible.* (<http://www.leginfo.ca.gov/cgi-bin/displaycode?section=puc&group=00001-01000&file=451-467>)

PG&E believes the CAISO needs to develop an expanded methodology to evaluate a broader range of benefits for non-conventional resources in the transmission planning process. The CAISO's current methodology of looking at non-conventional resources in the TPP only as non-wires solutions to meet NERC criteria creates an artificial barrier to entry for such assets that can help address reliability issues, because their use case will be so limited as to make them uneconomic in all but the most unusual of cases.

PG&E believes the CAISO needs to develop a methodology to study and accept "dual use" assets in the transmission system. This is particularly needed for storage resources. FERC Order

784 put in place the regulatory framework to allow multiple use storage assets through bifurcating rate recovered portions and wholesale market portions of the assets based on use, thus is clear that it is FERC's intent to allow such flexibility. Moreover, the CPUC Storage Order explicitly contemplates dual use assets operating in California's grid. But the intent of State and Federal regulators to enable dual use storage assets cannot be met without enabling procedures put in place at the CAISO.

Storage and other non-conventional resources have the potential to provide significant system benefits to California's grid, but in order those benefits to be realized at a reasonable cost to ratepayers, we must utilize those resources efficiently. Without the enablement of dual use assets, many of the potential system benefits of storage will either cost ratepayers more due to inefficient use cases for assets, or use of the benefits of the assets might fail to materialize at all.

### **Policy-Driven 33% RPS Transmission Plan Analysis (Section 7)**

As noted in the Reliability Assessments section above, PG&E discovered that contracts that were signed through PG&E's RAM and PV RFO did not appear to be included in the RPS Calculator provided by the CPUC. However, PG&E understands that these mandated program contracts are included as a reduction in the Renewable Net Short (RNS) calculation. PG&E nonetheless, urges the CAISO to work with the CPUC to ensure that all signed, commercial contracts are incorporated into the baseline portfolios for transmission planning purposes, if such contracts are available through the Project Development Status Report (PDSR) provided to the CPUC twice a year.

### **Economic Planning Study (Section 8)**

PG&E requests four economic studies be included as part of the CAISO 2014/15 TPP:

#### **1. Greater Fresno Area Study**

The CAISO approved a new Gates-Gregg 230 kV DCTL with one circuit strung in the 2012-2013 TPP. The operating date for this project is expected to be 2020.

PG&E requests that a study of the Greater Fresno Area be undertaken in the 2014-2015 TPP to **evaluate the merits of stringing the second circuit between Gates and Gregg as part of the initial installation** versus stringing the second circuit in a future year. (A preliminary cost analysis shows that it would be less costly to string the second circuit as part of the initial installation.) Two options are suggested for consideration by the CAISO. Option 1 consists of stringing the second circuit and installing jumpers between the No.1 and No. 2 circuits such that the two circuits share common terminations at Gates and Gregg. Option 2 consists of stringing the second circuit and installing terminations for the second circuit at Gates and Gregg.

The benefits and costs of stringing the second circuit as described above could be determined as follows: Task 1 consists of a power system analysis using the 2024 cases with Helms pumping to test the performance of each of the transmission options, listed above, and determine their incremental load serving capability using a define set of power flow cases. Task 2 consists of estimating the Helms flexible capacity and market

benefits provided by the second circuit using the water analysis approach and data developed and relied upon in the 2012-13 TPP. Task 3 consists of an economic analysis comparing the benefits and costs of the potential transmission upgrades, with a focus on the most economic timing for the second circuit. The economic analysis would rely on both the most recent set of flexibility analysis posted by the CAISO for the LTPP and the Investigating a Higher RPS in California cases to test and evaluate the impact of a second line on flexibility need and or renewable curtailment.

## 2. Central California Study

PG&E requests that a study of the **Tesla/Tracy – Los Banos area including potential Path 15 improvements**.

The Western Area Power Administration is currently moving forward with environmental review and early permitting of a proposed Tracy-Los Banos 500 kV or 230 kV transmission line to serve the Bureau of Reclamation pumping loads in the Los Banos area. PG&E believes it is critically important for the CAISO to conduct an economic study in the 2014/15 TPP to identify benefits associated with additional transmission from Tracy/Tesla area to Los Banos. Western has indicated as part of the Tracy – Los Banos project public outreach that they would consider upgrading the planned project to accommodate needs of Western and its customers as well as the CAISO and PG&E's customers. This is a fleeting opportunity. CAISO study results for upgrades in this area are needed in 2014/15 TPP to determine if it is appropriate for Western to upgrade their planned project to accommodate CAISO/PG&E customer needs in addition to their own.

Further, PG&E suggests the CAISO studies in 2014/15 consider the enhanced benefits when combining upgrades in the Tesla/Tracy- Los Banos area with relatively minor upgrades needed south of Los Banos (in combination with the Tracy-Los Banos line) to support a Path 15 rating increase of 300 MW to 1000 MW (depending on the results of production simulations). For example, a 300 MW increase might be achieved with relatively low-cost upgrades in the Gates area (in addition to the Tracy-Los Banos line); and a 1000 MW increase might be achieved with more significant upgrades of the Los Banos-Gates-Midway 500 kV path (in addition to the Tracy-Los Banos line).

## 3. Path 26 Study

The 2013-2014 TPP showed that Path 26 would experience congestion in ~8% of the hours in 2018 and ~5% of the hours in 2023 based on the assumptions in the production simulations. PG&E proposes that a study be undertaken in the 2014-2025 TPP to **re-estimate the congestions levels on Path 26**.

To the extent Path 26 is congested in this study, PG&E suggests consideration of a Midway-Vincent 500 kV line, a Midway-Vincent 230 kV line, or other alternatives as indicated by production simulations and power flow studies.

#### **4. North of Tesla Area Study**

PG&E requests an economic study for North of Tesla area be undertaken in the 2014-2015 TPP.

Previous studies conducted by the CAISO have identified a reduction in the COI import capability during certain system conditions following the termination of the California Department of Water Resources (CDWR) Comprehensive Agreement which requires participation in the 500 kV COI RAS in December 2014 .

PG&E appreciates the CAISO's recognition of the Table Mountain – Tesla Transmission project submitted by PG&E into the 2013/14 TPP request window. This project was submitted as a conceptual plan that requires further evaluation. PG&E supports the CAISO's position on the need to continue to study upgrades required in the North of Tesla Area in the future in order to preserve COI's existing import capability and to avoid curtailment on existing resources as well as avoid potential impact of any new resources that may be connected to the transmission system north of the Tesla substation.

In addition, overloading of the Table Mountain 500/230 kV transformer was seen in the energy market resulting in approximately \$38 million of congestion in 2012. Economic studies performed by the CAISO in the 2013-2014 TPP did not indicate congestion on this transformer in 2018 and 2023. However, it is likely those findings were due to the average or expected conditions that were assumed in the 2013-2014 TPP study. As such, PG&E requests that the 2014-15 study consider a broader range of operating conditions and potentially use additional analytic tools to quantify the economic benefits attributable to reduced congestion and greater availability of Northern California hydro-generation and intertie imports. The benefits could include load following and ancillary service market benefits among others.

PG&E encourages the CAISO consider transmission upgrades in the study area to provide economic benefit. The transmission upgrades would include: a combination of transmission upgrades and any necessary modifications of the 500 kV Remedial Action Scheme.

#### ***PG&E recommends that the Economic Studies Consider a Broad Range of Operating Conditions***

For both the Central California Study and the Path 26 Study, PG&E recommends that the CAISO Consider a Broad Range of Operating Conditions. Because production simulation models are designed to utilize normative assumptions regarding load, hydro conditions, thermal resource outages, and other variables in order to produce reasonable, mid-range estimates of resource dispatch and prevailing power flows, analysis that relies on such models is generally suitable for long term economics but not to identify many operating issues in the near-term or longer-term. These operating issues occur during extreme events such as very high output of wind, solar and hydro resources combined with very low load conditions and may be manifested in increased congestion on Path 15 and Path 26.

The two studies referred to above (LTPP integration and High RPS) found material integration issues in stress cases in 2022 and substantial over generation in 2030. Both studies assume no transmission congestion within the CAISO BA. Imposing some simple

transmission related constraints along the I-5 corridor, is likely to exacerbate the over generation problem in Southern California and improve the economics of investing in path upgrades. PG&E would be happy to work with the CAISO to transform these single BA no transmission constraint cases into zonal models to quantify the benefits of alternative upgrade plans.

The economic evaluation may include values for avoided generation curtailment, incremental availability ancillary services and/or ramping capability created by additional transfer capability across Path 15 and Path 26.