

Stakeholder Comments Template

Submitted by	Company	Date Submitted
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INTRODUCTION AND SUMMARY

Duke-American Transmission Company¹ (“DATC”) provides the following comments on the California Independent System Operator’s (“CAISO”) 2014 - 2015 Transmission Planning Process Draft Study Plan (the “Draft Study Plan”) and the February 27, 2014 Stakeholder Meeting. DATC files these comments on behalf of itself and two subsidiaries, DATC Path 15 LLC and Zephyr Power Transmission LLC. DATC, and its subsidiaries, appreciate the opportunity to participate in the TPP and believe wholeheartedly that an open, transparent, and flexible process is essential to properly plan for the needs of the electricity system.

The purpose of these comments is to request that the CAISO: (1) create a more flexible transmission planning process; (2) recognize a broader set of policies that can support policy driven upgrades; and (3) include a broader set of planning and generation scenarios that will enable the CAISO to create a more flexible transmission plan. Specifically, the CAISO should revise the Draft Study Plan as follows:

- 1) Include a statement that efficient use of transmission rights-of-way and assets and reduction in costs can support a policy driven project;

¹ DATC and its two parent entities, Duke Energy and American Transmission Company, have substantial experience and expertise in electric transmission from their many decades of ownership and operation of major transmission facilities in multiple states. In California, DATC Path 15 LLC, a subsidiary of DATC, owns 72 percent of the transmission service rights to the Path 15 Upgrade transmission project, an 84 mile, 500 kV transmission line in Central California. In addition, DATC is the sponsor of the proposed Zephyr Power Transmission Project (the “Zephyr Project”), a high-voltage direct current (“HVDC”) line, which will run from southeast Wyoming and interconnect to the CAISO balancing authority area at the Eldorado substation. The Zephyr Project will deliver wind generation being developed in southeast Wyoming by Pathfinder Renewable Wind Energy, LLC to communities in the Southwestern United States.

- 2) Include a statement that long-term GHG policies can support a policy driven project;
- 3) Include two new scenarios to address reliability issues: (i) a severe drought condition scenario, and (ii) a Fall Peak Scenario for the PG&E Bulk System and Central Valley; and
- 4) Include two new scenarios to address economic and policy needs: (i) a “GHG” or “Increased RPS” Scenario, and (ii) an out-of-state renewables scenario.

Finally, among many other benefits (e.g., addressing reliability and minimizing costs to ratepayers), broadening the Draft Study Plan will allow the CAISO to consider the benefits of projects such as the Zephyr Project and the 500 kV alternative to the San Luis Transmission Project.

DISCUSSION

I. Prudent Transmission Planning Should Be Flexible to Accommodate an Uncertain Future.

An essential element of any critical infrastructure planning process should be the recognition that the future is uncertain. This is especially true for electricity—a commodity essential to the public welfare that must be delivered in real time. The price of failure to hedge for uncertainty is particularly great in the context of transmission planning. Major transmission additions take many years to plan and permit; this is particularly true in California. Thus, needed but unplanned transmission cannot be built quickly as circumstances change. The opposite is not the case. Transmission that is planned, but later determined to be unnecessary, can easily be suspended prior to construction. Because the vast majority of transmission costs are incurred in the construction phase, stranded-cost risks are limited during the first 70-80% of the pre-construction portion of a typical transmission project schedule.² Stated simply, transmission planning risks are asymmetric: a transmission plan is much more flexible downward than upward.

There is another fact about transmission planning that highlights the need for flexibility. Transmission costs—even assuming construction—are a small percentage of the customer’s overall bill, typically less than 10 percent.³ The biggest component of the customer’s total bill is

² See for example, “Baseline Transmission Costs”, Table 2-1, as reported in *Capital Costs for Transmission and Substations, Recommendations for WECC Transmission Expansion Planning*, B&V Project No. 176322 (October 2012).

³ See for example, SCE Schedule GS-1 (General Service, Non-Demand, <https://www.sce.com/NR/sc3/tm2/pdf/ce74-12.pdf>), Transmission charge is \$0.01132/kWh/Meter/Day; total Delivery + Generation charges come to \$0.16993/kWh/Meter/Day (Summer rate) = 6.6%, \$0.13982/kWh/Meter/Day (Winter) = 8.1%; SCE Schedule TOU-D-1 (Time of Use Domestic, <https://www.sce.com/NR/sc3/tm2/pdf/ce84-12.pdf>), Transmission charge is \$0.01131/kWh/Meter/Day, total Delivery + Generation charges come to \$0.50518/kWh/Meter/Day (Summer, On-Peak rate) = 2.2%, \$0.19033/kWh/Meter/Day (Winter, Off-Peak) = 5.9%; PG&E Schedule A-6 (Small General Time of Use, http://www.pge.com/tariffs/tm2/pdf/ELEC_SCHEDS_A-6.pdf), Transmission charge is

generation. As DATC has repeatedly noted in comments filed at the CAISO and at the CPUC, minimizing transmission costs does not necessarily result in lower overall costs, as lack of transmission can raise generation costs that far outweigh the costs of building transmission. A transmission plan that guesses wrong on generation portfolio planning can force reliance on generation that is costly, environmentally harmful, or unreliable, leading to much larger ratepayer costs than the costs of planning for contingency transmission that is ultimately deemed unnecessary. Simply put, a myopic planning focus on a narrow range of scenarios aimed at reducing transmission costs is akin to choosing to fight fires, rather than invest in long-term fire prevention measures. The myopic focus can easily prove “penny-wise and pound foolish.”

In sum, prudent transmission planning strives for flexibility. As discussed in the next section, the CAISO should create a more flexible transmission plan by recognizing certain federal and state public policies that guide transmission development and address a broader range of planning and generation scenarios.

II. The Draft Study Plan Should Be Revised to Account for a Broader Range of Policy Objectives

The Draft Study Plan identifies only two policy objectives: the 33% RPS and Resource Adequacy. This narrow view of “public policy” requirements is not what was envisioned in FERC Order No. 1000, which requires transmission providers to consider “Public Policy driven” projects.⁴ Order No. 1000 directed transmission providers to:

...establish procedures for identifying those transmission needs driven by Public Policy Requirements for which potential transmission solutions will be evaluated in the local or regional transmission planning processes... As part of the process..., such procedures must allow stakeholders an opportunity to provide input, and offer proposals regarding the transmission needs they believe are driven by Public Policy Requirements.

These reforms were intended “to ensure that local and regional transmission planning processes support the development of more efficient and cost effective transmission facilities to meet the transmission needs driven by Public Policy Requirements.”⁵ In response to this directive, the CAISO codified Tariff Section 24.4.6.6, which requires the CAISO to evaluate transmission solutions needed to meet state, municipal, county or federal policy requirements or

\$0.01274/kWh; total rate (customer charge + energy rate, no counting PDP event) is \$0.36152 (using Winter Part-Peak as example) = 3.5%; PG&E Schedule E-6 (Residential Time of Use, http://www.pge.com/tariffs/tm2/pdf/ELEC_SCHEDS_E-6.pdf), Transmission charge is \$0.01706/kWh, total Winter Part-Peak Baseline rate is \$0.12129 = 14%; total Summer Part-Peak Baseline rate is \$0.17528 = 9.7%; Total Summer Peak Baseline rate is \$0.28719 = 5.9%.

⁴ FERC Order No. 1000 para. 207.

⁵ *Id.*

directives.⁶ The tariff states that the CAISO “will determine the need for, and identify such policy driven transmission solutions that efficiently and effectively meet policies under alternative resource location and integration assumptions and scenarios, while mitigating the risk of stranded investment.”

The process outlined in Section 24 of the CAISO Tariff is data-driven and analytical, but also allows the CAISO to exercise discretion in order to align its prioritization of policy-driven transmission projects with the resource planning processes of regulatory agencies, and to use its judgment and experience in making decisions about public policy-driven project priorities.⁷ This flexibility and discretion is important, because for the reasons discussed above, efficient and effective transmission planning requires both pragmatic consideration of a spectrum of planning assumptions *and* the ability to balance long and short term options and priorities.

In Section 3.1 of the Draft Study Plan, the CAISO reiterates the Public Policy Objectives it relied on in previous TPP cycles: “the state’s mandate for 33% renewable energy by 2020” as the “overarching public policy objective” in the current planning cycle.⁸ DATC believes there are multiple policy objectives that the CAISO must take into account during its planning process. Specifically, the Draft Study Plan should specifically address two additional policy objectives, as discussed below.

A. The Efficient Use of Rights-of-Way and Assets Should Be An Explicit Policy That May Support The Selection of Policy-Driven Transmission Projects.

Both federal and California law clearly articulate policies supporting the most efficient use of transmission rights-of-way. As noted above, FERC Order 1000 requires ISOs and RTOs to support “more efficient and cost effective transmission facilities.” Similarly, the Bureau of Land Management’s Corridor Policy states that “in order to minimize adverse environmental impacts and proliferation of separate ROWs, the utilization of rights-of-way in common (corridors) shall be required to the extent practical . . .”⁹

At the state level, California Public Utilities Code Section 399.26(b)(1) requires the CAISO to “work cooperatively to integrate and interconnect eligible renewable energy resources to the transmission grid *by the most efficient means possible with the goal of minimizing the impact and cost of new transmission needed to meet both reliability needs and the renewables portfolio standard procurement requirements*” (emphasis added). In addition, when the

⁶ See CAISO Tariff Section 24.4.6.6, available at:

http://www.aiso.com/Documents/Section24_ComprehensiveTransmissionPlanningProcess_Oct1_2013.pdf

⁷ For example, the CAISO uses scores and rankings in processes such as the California Renewable Energy Transmission Initiative (“RETI”) and the CPUC long-term procurement planning process, but “may also seek to modify such assessments for particular locations as appropriate.” (Transmission Planning BPM p. 38). Similarly, information “including but not limited to the estimated cost, permitting and construction time period, and need date” is considered in classifying a transmission solution as Category 1 or 2. (Id. p. 39).

⁸ Draft Transmission Planning Process Study Plan for 2014-2015 (February 20, 2014)

⁹ Federal Land Policy and Management Act, Section 503

California State Legislature adopted SB 1059, the legislature found and declared that “to promote the efficient use of the existing transmission system, the state should do both of the following: (1) encourage the use of existing rights of way, the expansion of existing rights of way, and the creation of new rights of way in that order [and] (2) promote the efficient use of new rights-of-way *when needed*, to improve system efficiency and the environmental performance of the transmission system (emphasis added).”

In sum, federal and state policies mandate the efficient use of transmission Rights-of-Way (“ROW”). The CAISO should cite to these policies in Section 3 of the Draft Study Plan and explicitly recognize that these policies may support the selection of a policy driven transmission project where a planned transmission project can be expanded to more efficiently make use of limited right-of-way resources.

B. Long Term Greenhouse Gas Policies Should Also Be Explicitly Recognized in the List Of Policy Objectives.

The Draft Study Plan does not address what is likely to be one of the key policy drivers for transmission development: California’s greenhouse gas reduction goals.¹⁰ Assembly Bill 32 (or “The California Global Warming Solutions Act of 2006”) declared that global warming posed a serious threat to the economic well-being, public health, natural resources, and the environment of California. AB 32 set an initial target of reducing California’s GHG emissions to 1990 levels by 2020. It further tasked the California Air Resources Board (“CARB”) with “monitoring and regulating sources of emissions of greenhouse gases that cause global warming in order to reduce emissions of greenhouse gases.”¹¹ Pursuant to Executive Order S-3-05, California has a longer term GHG goal of 80% below 1990 levels by 2050. CARB is currently developing a broad framework for measures to meet this goal.¹² CARB calls for significant energy-related emission reductions, coupled with electrification of the transportation sector. Moreover, a recent study by Lawrence Berkeley National Laboratory (and supported by CARB’s Research Division) showed that in order to reach California’s 2050 GHG goal, the state would need to achieve greater than 40% renewable generation by 2020, or 51% by 2030.¹³ Thus, rather than a singular focus on California’s 33% RPS, the CAISO should consider the policy-driven impacts of the much higher levels of renewable generation required to achieve California’s long term GHG goals. The CAISO should cite to these policies in Section 3 of the Draft Study Plan

¹⁰ Despite the requirements of Order 1000, the broad language contained in the CAISO’s August 20, 2013 compliance filing that would require consideration of “state, municipal county, or federal policy requirements or directives,” and the CAISO’s assurances in its Draft Final Proposal concerning its Order 1000 compliance that it would not limit public policy requirements to the 33% RPS, for the last three TPP cycles the CAISO has done exactly that.

¹¹ Health and Safety Code section 38510.

¹² See Draft AB 32 Scoping Plan Update, available at: <http://www.arb.ca.gov/cc/scopingplan/document/updatedscopingplan2013.htm>

¹³ Jeffery Greenblatt, “Policy-Driven Greenhouse Gas Emissions Trajectories in California: The California Greenhouse Gas Inventory Spreadsheet (GHGIS) Model,” at 25.

and explicitly recognize that achieving the State’s GHG goals may support the selection of a policy driven transmission project.

III. The Draft Study Plan Should Be Revised to Account for a Broader Range of Planning Scenarios

A. The CAISO Should Improve the Analysis of Reliability Needs in the Draft Study Plan by Studying Long-Term Drought Conditions and a PG&E Fall Peak Scenario for the PG&E Bulk Transmission System.

There is no question that the drought in the Western United States will severely impact California’s ability to rely on hydro power. As noted by Mr. Berberich in his recent report to the CAISO Board of Governors, “[w]e are monitoring drought conditions closely . . . the northern Sierra has a snowpack that’s only 8% of normal . . . the central Sierra is at 16% of normal [and] the southern Sierra is at 22% of normal.”¹⁴ If these conditions continue, many of the assumptions that the CAISO is making about the future availability of hydro resources will prove incorrect. Therefore, the CAISO should include a new scenario that specifically accounts for long-term severe drought conditions and addresses transmission needs that result from an inability to rely on hydro resources.

In addition, The Study Scenarios in the ISO Reliability Assessment should include a fall peak scenario for the Northern California Bulk System and Central Valley.¹⁵ The Draft Study Plan’s focus on summer peak scenarios do not capture the full range of reliability issues facing the electricity system. These additional fall scenarios would represent a lightly loaded fall morning with high wind and morning solar generation. The case would simulate high south to north flows on Path 15 & 26 that are typical of historical fall morning values.

B. To Create a More Flexible Plan, the CAISO Should Broaden The Generation Scenarios Considered in the Draft Study Plan.

Pursuant to a May 2010 Memorandum of Understanding (“MOU”), the CAISO relies upon input from the CPUC and the CEC to develop the generation portfolios that the CAISO uses in the TPP. On February 27, 2014, the CPUC and the CEC transmitted the Base Case and Alternative Renewable Resource Portfolios for the CAISO 2014-2015 TPP. As the CAISO noted in the previous 2013-2014 TPP, “there continues to be a great deal of uncertainty about which areas of the grid will actually realize most of this new resource development.”¹⁶ In order to address this uncertainty, the CAISO applies what it refers to as a “least regrets” principle, in order to balance the development of needed transmission in time to meet public policy requirements, while at the same time avoiding stranded cost risks.

¹⁴ See President/CEO Steve Berberich “CEO Report” to ISO Board of Governors (January 30, 2014), available at: http://www.caiso.com/Documents/CEO_Report-Feb_2014.pdf

¹⁵ See Table 4-1 – Summary of Study Scenarios in the ISO Reliability Assessment at p. 13 of the Draft Plan.

¹⁶ See 2013-2014 Draft Transmission Plan at pp. 16-17.

Despite the CAISO's recognition of uncertainty regarding future development of generation resources, it appears that the CAISO will continue in the 2014 – 2015 TPP to rely on a very limited number of generation scenarios.¹⁷ The February 27, 2014 letter only recommends four scenarios.¹⁸ Use of a small number of scenarios, with little variability, will result in the development of a less flexible transmission plan that runs the risk of failing to provide transmission access to preferred least cost generation resources.

To provide for a more flexible 2014-2015 Transmission Plan, the CAISO should broaden the Draft Study Plan generation scenarios in two ways. First, there should be a new scenario that addresses long-term GHG system needs. This scenario should account for higher degrees of renewable penetration (i.e., greater than 33%) in the 2024 time horizon that will be necessary to fulfill the State's GHG goals discussed above.

Second, there should be a new scenario that assumes a high reliance on out-of-state renewable resources. This scenario would help address the risks of over-generation discussed in Section 6.3 of the Draft Plan. One of the largest integration challenges is over generation (consistent with concerns that the CAISO has raised through its ubiquitous "duck curve"). A recent study by E3 explored various methods of addressing projected over-generation, including studying the effects of various RPS resource portfolios. The study considered four RPS portfolios under a 50% RPS: portfolios emphasizing large solar, small solar, rooftop solar, and a diverse resource portfolio. Integration costs were lowest under the diverse resource portfolio (including 3,966 MW of out-of-state wind), even though the transmission costs associated with that portfolio were higher than for the other three portfolios.¹⁹ The study emphasizes the need for enhanced regional coordination to allow for access to out-of-state renewable resources that can reduce integration costs and provide lower rate impacts than overreliance on in-state solar resources.

In sum, broadening the Draft Study Plan as discussed above will allow the CAISO to effectuate a more balanced, flexible, and prudent transmission plan. The CAISO will be able to more clearly recognize the benefits of new transmission projects and create new opportunities to minimize costs for ratepayers. Two examples of projects whose benefits would be recognized in a broader transmission plan are discussed in the next section.

¹⁷ *Id* at p. 9.

¹⁸ See February 27, 2014 letter from the CPUC and CEC to the CAISO.

¹⁹ *Investigating a Higher Renewables Portfolio Standard in California*, Energy and Environmental Economic, Inc. (January 2014) ("E3 Report"), p. 24, available at: http://www.ethree.com/documents/E3_Final_RPS_Report_2014_01_06_with_appendices.pdf

IV. By Broadening the Study Policies, Scenarios and Planning Assumptions, the CAISO Will Be Able to Recognize the Benefits of Transmission Projects Such as the Zephyr Project and San Luis 500 kV Alternative.

A. A Broader Study Plan Would Enable the CAISO to Address the Benefits of Projects Such as the Zephyr Project.

The Zephyr Project is an HVDC transmission line, which will run from southeast Wyoming and interconnect to the CAISO balancing authority area at the Eldorado substation. It will deliver wind generation being developed in southeast Wyoming by Pathfinder Renewable Wind Energy, LLC to communities in the Southwestern United States. In the previous TPP cycles, the CAISO declined to study the Zephyr Project.²⁰

In light of this history, DATC continues to have serious concerns about the development of the RPS portfolios at the CPUC and the CAISO's determination to rely exclusively on those portfolios in developing its transmission plans. As noted above, the CAISO should consider either on its own, or in conjunction with the CPUC's development of the RPS portfolios, a wider range of potential resources to meet California's RPS, including out-of-state wind that can ameliorate costs of renewable integration. In addition, as discussed above, the CAISO should consider higher levels of renewable penetration that will be necessary to meet the State's greenhouse gas objectives. The Zephyr Project would satisfy both of these needs.

B. The 2014-2015 Draft Plan Should Include Expansion of the San Luis Transmission Project.

DATC Path 15 provided comments in the 2013-2014 TPP urging the CAISO to take advantage of a fleeting opportunity to support a 500 kV Alternative to Western's proposed 230 kV transmission line between Western's Tracy and San Luis Substations. The comments described the Western project, and noted that Western had initiated environmental review of both the 230 kV San Luis Transmission Project and a 500 kV alternative that would allow the CAISO to address a weak link in the 500 kV backbone of the CAISO grid between Tracy-Tesla and Los

²⁰ In the 2012-2013 Transmission Planning Process ("TPP") DATC timely submitted a request for an Economic Planning Study on behalf of Zephyr Power Transmission LLC ("Zephyr"). In its final Transmission Plan for 2012-2013, the CAISO noted that it did not act on that request, in part on the ground that the "renewables portfolios developed by the CPUC with the assistance of the CEC and ISO... do not reflect the generation proposed by Zephyr Power Transmission LLC... and accordingly those resources were not modeled exploring the benefits of further reinforcements into the Desert Southwest." (2012-2013 Transmission Plan at 318.) In comments submitted on March 14, 2013 concerning the draft Study Plan for this 2013-2014 TPP, DATC reiterated its request for an Economic Planning Study on behalf of Zephyr. In its responses to stakeholder comments, the CAISO again declined to act on the request, stating, "as the CAISO has discussed on previous occasions the current Renewable Portfolio Standard ("RPS") portfolios do not support the renewable resources at the sending end of the proposed transmission line." (CAISO Responses to Stakeholder Comments, Draft 2013-2014 Study Plan at 50.)

Banos (“San Luis 500 kV Alternative”). DATC’s comments in the 2013 – 2014 TPP provided a detailed discussion of why the San Luis 500 kV Alternative can and should be designated a public policy-driven transmission solution. Specifically, DATC called on the CAISO to approve the additional capacity (approximately 1000 MW of transfer capability between Los Banos and Tracy) created by the San Luis 500 kV Alternative. Given the timing of the environmental review for the San Luis 230 kV Transmission project, if California is to realize the benefits of this fleeting opportunity, the 500 kV Alternative must be studied by the CAISO in this iteration of the TPP. By explicitly recognizing state and federal policies for the efficient utilization of transmission rights-of-way in the Draft Study Plan, the CAISO will be able to more clearly recognize the benefits of a project like the 500 kV alternative to the San Luis Transmission Project.

The long term value of the 500 kV alternative to the San Luis Transmission Project may be highlighted in a fall study scenario. As discussed above, the CAISO study scenarios should more fully account for system reliability needs by including scenarios other than summer peak cases where directional flow biases can reach levels that mimic historical congestion patterns. For example, the previous 2011 California Transmission Planning Group (“CTPG”) study effort included a scenario with high “South-to-North” flow from the LA Basin toward the Bay area.²¹ The study scenario was supportive of projects that would raise Path 15 and Path 26 transfer limits. Specifically, the CTPG “South-to-North” Scenario 5 “was developed to identify any potential reliability standard violations during a lightly loaded fall morning with high wind and morning solar generation in southern California. . . . The South to North Flow scenario examined the foundation case where flows on Paths 15 and 26 in central California are south to north, typical of historical fall morning values (prior to the addition of new renewable resources).”

The CTPG South-to-North Foundation case included a 6,206 MW south to north flow on Path 15 (based on a 5400 MW Path rating) and a 2,517 MW south to north flow on Path 26.²² While that particular CTPG scenario included a Path 15 base flow that exceeded the Path rating, future CAISO models should include at least one scenario where Path 15 flow bias approaches the Path rating levels.

The 2011 CTPG Study proposed a 500 kV Midway-Tesla Mitigation to address flow issues along Path 15 and Path 26. If the CAISO expands its analysis to address a Fall-peak scenario as requested above, the Study Plan will enable the CAISO to address the benefits of a 500 kV alternative to the San Luis Transmission Project line in the 2014-2015 TPP.

²¹ CTPG 2011 Phase 2 Study Report Final, p. 7 (December 21, 2011).

²² See CTPG Final Phase 2 Study Report at p. 50.

CONCLUSION

DATC's comments focus on the need for the CAISO to expand its Draft Study Plan, *not necessarily the system*, in order to provide increased flexibility to meet future needs. By relying on a limited set of policies and planning / generation scenarios, the Draft Study Plan would create an inflexible 2014 – 2015 TPP. This approach is mutually exclusive to creating valuable options. As discussed above, DATC points out specific enacted policies that are excluded from the study plan. These include the efficient use of transmission rights-of-way and assets, and the State's GHG goals. Explicit consideration of these additional policies will result in correctly approving additional facilities necessary to meet the policy goals. Our comments also call on the CAISO to broaden the Draft Study Plan to account for certain reliability based planning scenarios and additional generation scenarios that will help create a more flexible transmission plan. DATC appreciates the opportunity to provide these comments and looks forward to working with the CAISO on the 2014-2015 TPP.