STAKEHOLDER COMMENTS ON 2013-2014 DRAFT TRANSMISSION PLAN

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Submitted By	Company	Date Submitted
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I. Introduction

Duke Energy ("Duke") submits the following comments concerning the California Independent System Operator's ("CAISO") draft 2013-2014 Transmission Plan ("Draft Plan") issued February 3, 2014, and the Stakeholder Meeting held February 12, 2014.

Duke develops and owns energy storage projects throughout the United States. Most recently, Duke completed a 36 megawatt ("MW") battery storage project at its 153 MW Notrees wind farm in Texas. That storage facility is currently the largest battery storage project in North America that is integrated with a renewable energy facility. In addition to several previous pilot projects, in 2012 Duke implemented three energy storage systems as part of the Electric Power Research Institute's Smart Grid Demonstration, including a 402 kilowatt battery system at the Rankin Substation in Mount Holly, North Carolina, to smooth fluctuation in generation from a nearby 1.2 MW solar facility. Duke currently has a large pipeline of energy storage projects in active development, including in California. Duke's comments herein are directed toward elements of the Draft Plan addressing energy storage.

Duke is also involved in planning and developing strategic transmission projects across the United States and Canada, as part of a joint venture with American Transmission Company, known as Duke-American Transmission Company ("DATC"). DATC is developing the Zephyr Transmission Project, a high-voltage direct current line to connect wind resources to load centers

in California and the Southwest. DATC is also the majority owner of the transmission service rights to Path 15. DATC is separately submitting comments on the Draft Plan.

II. The CAISO Must Improve Its Processes for Evaluating Energy Storage

Duke appreciates the efforts of the CAISO to provide a process that would increase opportunities for non-conventional or preferred resources, including energy storage resources, to meet local area needs in lieu of new transmission and conventional generation. Duke participated in the stakeholder process, which began with the September 4, 2013 white paper entitled "Consideration of alternatives to transmission or conventional generation to address local needs in the Transmission Planning Process" ("White Paper"), and participated in the September 18, 2013 stakeholder teleconference.

One of the advantages of energy storage is its ability to perform multiple functions. This very advantage, however, can make it difficult to carve out a place for energy storage in the traditional regulatory structure. As the Federal Energy Regulatory Commission ("FERC") has noted, "storage devices do not fit neatly into a traditional category of assets, be it transmission, generation, or distribution, given their ability to perform multiple functions." (*Western Grid Development, LLC*, 130 FERC ¶ 61,056, at ¶ 47 (2010).) Storage can be either a transmission facility or a non-transmission alternative, functioning similar to both generation and load. Under the CAISO tariff, energy storage can be treated as either. (*See* October 11, 2012 FERC Order 1000 Compliance Filing, Docket No. ER13-103-000, at 81.) However, choosing one or the other can curtail the uses to which the storage device can be put. (*See Western Grid Development, LLC*, 130 FERC ¶61,056 at ¶¶ 49-51.) One of the challenges in fully utilizing energy storage will be to develop a regulatory structure, and more particularly, a transmission planning process

("TPP"), that will allow the CAISO, and participating transmission owners, to both recognize and utilize the benefits that energy storage can provide.

Pursuant to the CAISO's TPP, energy storage projects have been submitted in the Phase II request window for consideration as transmission solutions in both the 2010 and 2011 TPP. (October 11, 2012 FERC 1000 Compliance Filing, Docket No. ER12-103-000 at 81 n.210.) However, none were approved. In 2010, Western Grid Development, LLC submitted a total of eight projects. All eight were eventually rejected. Seven were rejected as unnecessary in the 2010 Transmission Plan. Evaluation of the eighth, Auburn 60 kV Energy Storage Project, was deferred until 2011, and then was rejected in the 2011/2012 Transmission Plan.

Last year, the CAISO begin developing a process to consider non-conventional alternatives that could be selected as the preferred solution in the CAISO's TPP. These alternatives were to be considered as non-transmission solutions that could defer or eliminate the need for conventional generation or new transmission. As part of that process, the CAISO published the White Paper on September 4, 2013, and used a modified version of the process outlined in the White Paper in this TPP. As explained in the Draft Plan, the CAISO evaluated a number of scenarios using non-conventional alternatives, including energy storage with durations of four hours and two hours, and determined that 580 MW of storage with a duration of four hours, along with other resources, "appear[ed] to be feasible in mitigating the most critical contingency." (Draft Plan at 100.) A number of local transmission reinforcements were deferred in the San Diego area as a result of this analysis. (Draft Plan at 8.) However, as discussed further below, the CAISO intends to take only a "wait and see" approach to see whether such storage resources develop, and may in the end pursue the transmission solution if the alternative resources fail to materialize.

While Duke appreciates the efforts that the CAISO has made to consider energy storage as potential transmission and non-transmission solutions, much more needs to be done to ensure that energy storage becomes a viable alternative to more conventional solutions. Taking full advantage of these potential resources requires careful coordination between the CAISO and stakeholders, and between various regulatory agencies that are involved. It also requires a transparent process that allows stakeholders, especially energy storage developers with intimate knowledge of the capabilities of various storage technologies, to work with the CAISO to ensure that energy storage has an opportunity to participate in the TPP, to be appropriately evaluated, and to eventually be constructed and utilized in lieu of conventional alternatives.

In the 2013-2014 TPP, the CAISO did not provide the White Paper until it was well within Phase 2 of the process, and shortly before the Phase 2 request window closed. As noted in the White Paper, the CAISO's new approach to non-conventional resources was designed to avoid case-by-case evaluation of specific proposals, and instead identify needed performance characteristics in advance to allow suppliers of non-conventional resources to assess whether their resources could provide the needed performance. (White Paper at 8.) The first step of that process, as proposed in the White Paper, was to develop a generic resource catalog that would allow CAISO to test what mix of generic resources might provide the performance characteristics needed for a particular local area. (White Paper at 10.) However, for the 2013-2014 TPP, the generic resource catalog was developed without any input from stakeholders. Though the White Paper suggested that the generic resource catalog would be updated in Phase 1 of any given TPP cycle to reflect new information or new resource types that might become available (White Paper at 10), such a process was not provided in this 2013-2014 TPP. It is essential that the CAISO create a stakeholder process that allows stakeholders to fully vet the

generic resource catalog to ensure that it fully captures the appropriate performance characteristics. That process should allow stakeholders and the CAISO to jointly develop a final generic resource catalog that would be included in the final Study Plan.

The White Paper also contemplates that, "[o]nce a preliminary catalog of generic resources is developed, the second component of this methodology is to carry out a process of selecting, refining, and validating a potential mix of resources that could best provide the performance characteristics needed for a particular local area." (White Paper at 10.) The White Paper contemplates that this step would be carried out during Phase 2. The White Paper also contemplates that stakeholders would have input in the selection of the potential resource mix, prior to the CAISO's analysis to validate that selected mix of resources would meet identified reliability needs. In the 2013-2014 TPP, no such opportunity was provided to stakeholders, and the CAISO only evaluated a set of scenarios provided by Southern California Edison. While Duke understands that the timeline associated with implementing the new procedure may have inhibited the CAISO's ability to allow such input, it is important that such opportunities be provided in future TPPs.

In both instances, creating opportunities for dialogue between stakeholders, especially resource developers, and the CAISO is critical to the success of any process to allow consideration of non-conventional solutions. Resource developers need opportunities to convey the capabilities of their resources to the CAISO, while the CAISO needs to convey sufficient information regarding reliability needs that developers can create the solutions for those needs. The same holds true for energy storage utilized as a transmission solutions. CAISO should also consider whether the current TPP process allows energy storage proposed as transmission assets to fully compete with more traditional transmission assets, and whether further refinements to the

TPP would be appropriate to allow energy storage to be a viable alternative to traditional transmission assets.

Finally, the White Paper, although it creates a process for the participation of non-conventional resources, contemplates that such resources would only be considered "in situations where the timeline for an identified need allows time for monitoring the development of non-conventional alternatives *before* a conventional solution would be required to be approved." (White Paper at 3 (emphasis added).) As explained in the White Paper, the CAISO would monitor the development of the non-conventional solution to determine whether it would be in place by the time needed, and if the CAISO determined the non-conventional resource is not developing in a timely manner, it would reinstate the conventional (i.e., transmission or generation) solution. Furthermore, the CAISO would not play a part in the development of the non-conventional solution. "To the extent an identified non-transmission solution constitutes the most prudent and cost-effective solution for meeting a need, the CAISO will simply decline to approve a transmission solution. The CAISO does not approve specific non-transmission solutions, nor does it have the tariff authority to do so." (October 11, 2012 FERC Order 1000 Compliance Filing, Docket No. 13-103-000 at 81-82.)

The timeline contemplated the CAISO is problematic. Transmission solutions take considerable time to permit and construct, far longer than many types of energy storage. Requiring the development of energy storage before a transmission solution would be required to be approved means that energy storage solutions would have to be developed well before they are actually required to meet reliability needs. While Duke understands that the CAISO does not have the tariff authority to approve specific non-transmission solutions, the CAISO should work in conjunction with the California Public Utilities Commission ("CPUC") to create a process

whereby any non-conventional solution could be pursued through the long-term procurement proceeding ("LTPP") or other CPUC procurement mechanisms. By coordinating with the CPUC to create a process whereby non-conventional solutions can be selected and developed, the CAISO and the CPUC will increase the likelihood that such solutions are actually implemented. Duke appreciates the efforts of the CAISO and the CPUC to coordinate the LTPP and the TPP. However, such coordination should be expanded to consider specifically how non-conventional solutions selected by the CAISO can be further pursued through the LTPP.

III. Conclusion

While Duke appreciates the efforts that the CAISO has made thus far to appropriately consider and evaluate energy storage, there is significant work remains to be done to ensure that energy storage becomes a viable part of the solution, along with traditional generation and transmission. Duke urges the CAISO to consider the above recommendations as it finalizes the 2013-2014 draft Transmission Plan, and begins the 2014-2015 TPP.