

**UNITED STATES OF AMERICA  
BEFORE THE  
FEDERAL ENERGY REGULATORY COMMISSION**

Transmission Planning Within the California Independent System Operator Corporation ) Docket No. AD18-12-000  
)

**COMMENTS OF THE  
CALIFORNIA WIND ENERGY ASSOCIATION**

Pursuant to the Commission's Notice of May 15, 2018,<sup>1</sup> the California Wind Energy Association ("CalWEA") respectfully submits these comments concerning the processes used by certain transmission owners in the California Independent System Operator Corporation ("CAISO") to determine which transmission-related maintenance and compliance activities and facilities are subject to the CAISO Transmission Planning Process ("TPP").<sup>2</sup>

As explained below, the Commission should require transmission owners to submit to the TPP any bulk electric system operation and maintenance ("O&M") projects that result in the curtailment of 1 gigawatt-hour or more of electric generation during the O&M process. The Commission should further direct CAISO to apply the most cost-effective technological solutions to control O&M costs and minimize curtailments.

**I. CALWEA's INTEREST**

CalWEA is a non-profit corporation supported by over 25 wind energy industry members, including turbine manufacturers, project developers actively involved in developing wind projects to help meet California's RPS program, existing project owners, component manufacturers,

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<sup>1</sup> *Local Transmission Planning within the California Independent System Operator Corporation*, Notice Inviting Post-Technical Conference Comments, Docket No. AD18-12 (May 15, 2018).

<sup>2</sup> Parties at the technical conference discussed the possibility of forming a separate O&M review process instead of using the TPP. CalWEA is indifferent as to the procedural mechanism, but for purposes of these comments has simply assumed the existing TPP mechanism will be used.

support contractors, and others. CalWEA encourages and supports the production of electricity through the use of wind generators and actively represents the interests of its members in various proceedings before regulatory agencies and the CAISO.

## II. BACKGROUND

On March 23, 2018, the Commission issued a Notice of Technical Conference concerning transmission planning within the CAISO.<sup>3</sup> The technical conference originated out of two existing dockets: (1) Southern California Edison Company's ("Edison") filing of revisions to its transmission owner tariff detailing a new annual Transmission Maintenance and Compliance Review process (Docket No. ER18-370); and (2) a complaint filed by, among others, the California Public Utilities Commission against Pacific Gas and Electric Company ("PG&E"), alleging that PG&E fails to submit certain maintenance projects to the TPP, as required by Order No. 890<sup>4</sup> (Docket No. EL17-45).<sup>5</sup> The technical conference addressed questions posed by Commission staff concerning the processes used by the transmission owners to determine which O&M activities are subject to the TPP.<sup>6</sup>

At the May 1, 2018, technical conference, Edison, PG&E, and San Diego Gas and Electric Company (collectively, the "Transmission Owners") explained that they use CAISO's criteria to decide whether to submit transmission projects to the TPP. The Transmission Owners stated that

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<sup>3</sup> *Local Transmission Planning within the California Independent System Operator Corporation*, Notice of Technical Conference, at P 1, Docket No. AD18-12 (March 23, 2018) ("Notice").

<sup>4</sup> *Preventing Undue Discrimination and Preference in Transmission Service*, Order No. 890, 72 Fed. Reg. 12,266, 12,279 (2007), *on reh'g and clarification*, Order No. 890-A, 73 Fed. Reg. 2984 (2008), *on reh'g*, Order No. 890-B, 123 FERC ¶ 61,299 (2008), *on reh'g and clarification*, Order No. 890-C, 126 FERC ¶ 61,228, *clarified*, Order No. 890-D, 129 FERC ¶ 61,126 (2009).

<sup>5</sup> Notice at P 1.

<sup>6</sup> *See Local Transmission Planning within the California Independent System Operator Corporation*, Supplemental Notice of Technical Conference, Docket No. AD18-12 (Apr. 10, 2018).

their practice is to submit projects to the TPP when they will add transmission capacity. They also explained that they prioritize and select O&M projects based on their internal review processes.

The Complainants in Docket EL17-45 argued that certain large-scale O&M activities should be treated as transmission planning and studied in the TPP or through similar review procedures open to stakeholder participation. The Complainants also argued that there should be a stakeholder review and challenge process for O&M activities.

The Commission invited post-technical conference comments in its Notice of May 15, 2018.<sup>7</sup>

### III. COMMENTS

#### **A. The Commission Should Require Transmission Owners to Submit for Planning Review all O&M Projects that Result in the Curtailment of 1 Gigawatt-Hour or More of Electric Generation During the O&M Process.**

The Commission has recognized the interplay between transmission maintenance, reliability and planning:

For the reasons discussed below, the Commission finds that planned maintenance outages of less than six months in duration may result in relevant impacts during one or both of the seasonal off-peak periods. Prudent transmission planning should consider maintenance outages at those load levels when planned outages are performed to allow for a single element to be taken out of service for maintenance without compromising the ability of the system to meet demand without loss of load. We agree with commenters such as MISO and ATCLLC that certain elements may be so critical that, when taken out of service for system maintenance or to facilitate a new capital project, a subsequent unplanned outage initiated by a single-event could result in the loss of non-consequential load or may have a detrimental impact to the bulk electric system reliability. A properly planned transmission system should ensure the known, planned removal of facilities (i.e., generation, transmission or protection system facilities) for maintenance purposes without the loss of non-consequential load or detrimental impacts to system reliability such as cascading, voltage instability or uncontrolled islanding.<sup>8</sup>

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<sup>7</sup> See *Local Transmission Planning within the California Independent System Operator Corporation*, Notice Inviting Post-Technical Conference Comments, at P 1, Docket No. AD18-12 (May 15, 2018).

<sup>8</sup> *Transmission Planning Reliability Standards*, 145 FERC ¶ 61,051, at P 41 (2013) (emphasis added, footnotes omitted).

Thus, CAISO should already be taking the anticipated near-term reliability impacts of maintenance outages into consideration in the TPP. The Commission should take this one step further by establishing formal criteria for the submission of O&M activities for evaluation in the TPP as part of the reliability impact analysis.

The question is the triggering threshold for such review. CalWEA submits that the trigger should use well-understood and easily verifiable criteria. One component should be whether the O&M has a material impact on the bulk electric system (using North American Electric Reliability Corporation criteria) to ensure that only significant actions are subject to scrutiny. There should also be a market impact trigger, such as a non-consequential loss of load and cascading outage risks as mentioned in the above quotation. Another one is generator impacts because extended outages can result in lost sales and the unavailability of generation to help manage the transmission grid. CAISO review would provide an opportunity for an independent assessment of those impacts and analysis of the best means to mitigate them. We suggest a threshold of 1 GWh of lost electric generation (from all sources) because that level is high enough to avoid unnecessary delays of routine O&M activities, but low enough that material lost generation is examined. This criterion would be in addition to whatever other threshold criteria FERC adopts for including an O&M Project in the TPP or other stakeholder process.

Further, stakeholders should have a role in the review process. The TPP is “intended to provide transmission customers and other stakeholders a meaningful opportunity to engage in planning along with their transmission providers.”<sup>9</sup> In CalWEA’s view, it is vital for stakeholders to have a role in the Transmission Owners’ selection of large maintenance projects, given the effects of those projects on stakeholders.

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<sup>9</sup> Order No. 890, at P 488.

**B. The Commission Should Require CAISO to Consider Cost-Effective Technological Solutions in its Review of Transmission O&M in the TPP.**

In addition to requiring Transmission Owners to submit significant O&M activities into the CAISO's TPP, the Commission should require CAISO to consider technological solutions that either result in O&M cost savings, reduction of electric generation curtailments, or reduce the duration of maintenance outages. We recognize that Transmission Owners must balance cost, efficiency, and reliability whenever a new technology becomes available, but there are promising examples worth considering.

*Dynamic Line Rating:* Currently, all transmission owners and operators calculate static ratings for their transmission lines, which indicate the maximum current that the line's conductors can carry.<sup>10</sup> But line ratings change minute-by-minute based on ambient conditions. Dynamic Line Rating technology enables transmission owners to determine capacity and apply line ratings in real time, allowing operators to take advantage of additional capacity when it is available (*e.g.*, when wind speed is higher, wind generation is increased, yet lines are also cooled, increasing line ratings).<sup>11</sup> Notably, where it has been tested and deployed, Dynamic Line Rating technology has proven to offer congestion relief, greater transmission system reliability, decreased costs, and more efficient integration of wind generation.<sup>12</sup>

*Advanced Power Flow Controls:* A number of other new technologies enable operators to use existing transmission resources more efficiently by controlling the power flow within the grid. These devices may increase overall grid transmission utilization by more than 30% and result in

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<sup>10</sup> *Dynamic Line Rating Systems for Transmission Line, Topical Report*, U.S. DEP'T OF ENERGY, at p. i (Apr. 25, 2014), available at: <https://go.usa.gov/xQPrN>.

<sup>11</sup> *Id.* at i-ii.

<sup>12</sup> *Id.* at 59-60.

cost savings of over 50% compared to upgrading the transmission lines themselves.<sup>13</sup> Moreover, this technology supports greater deployment of renewable energy by providing transmission owners and operators with more consistent control over how such energy is routed within the grid.<sup>14</sup>

*Topology Optimization:* Topology optimization enables RTOs/ISOs and transmission owners to increase the capability of the transmission system by automatically identifying reconfiguration options to divert energy flow around grid bottlenecks.<sup>15</sup> This technology allows transmission owners to (1) manage congestion, substantially reducing the associated costs; (2) respond to contingency situations, improving reliability and resilience; and (3) improve outage scheduling and coordination.<sup>16</sup> Moreover, it can reduce energy curtailment by up to 40%.<sup>17</sup>

These are just three examples of a number of new technologies that can address transmission owners' needs more efficiently and effectively in some situations than high-cost capital projects.<sup>18</sup>

#### IV. CONCLUSION

CalWEA respectfully requests the Commission require transmission owners to submit maintenance and compliance projects for review under the CAISO TPP or a similar process where

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<sup>13</sup> See *Distributed Power Flow Control*, ADVANCED RESEARCH PROJECTS AGENCY, U.S. DEP'T OF ENERGY, available at: <https://go.usa.gov/xQPYZ>.

<sup>14</sup> *Id.*

<sup>15</sup> Pablo A Ruiz, *Transmission Topology Optimization Software*, ERCOT, at p. 3 (Dec. 6, 2016), available at: [http://www.ercot.com/content/wcm/key\\_documents\\_lists/85542/05.\\_Transmission\\_topology\\_control\\_-\\_ERCOT\\_ETWG\\_12616.pdf](http://www.ercot.com/content/wcm/key_documents_lists/85542/05._Transmission_topology_control_-_ERCOT_ETWG_12616.pdf).

<sup>16</sup> *Id.*

<sup>17</sup> TIM HEIDEL, ADVANCED RESEARCH PROJECTS AGENCY, U.S. DEP'T OF ENERGY, *ARPA-E Electricity Research Programs*, at p. 23, available at: <https://go.usa.gov/xQP2g>.

<sup>18</sup> The WATT Coalition's March 2018 White Paper provides an excellent discussion of these advanced technologies. See ROB GRAMLICH, WORKING FOR ADVANCED TRANSMISSION TECHNOLOGIES (WATT) COALITION, *Bringing the Grid to Life: White Paper on the Benefits to Customers of Transmission Management Technologies* (Mar. 2018), available at: <https://watttransmission.files.wordpress.com/2018/03/watt-living-grid-white-paper.pdf>.

those projects are directed to the bulk electric system and require generation curtailment of 1 gigawatt-hour or more. CalWEA further requests that as part of that review process, the Commission require transmission owners to consider new technologies, which may represent less-expensive and more effective solutions than expensive capital projects.

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Respectfully submitted,

/s/ Raymond B. Wuslich  
Raymond B. Wuslich  
Zachary B. Cohen  
Winston & Strawn LLP  
1700 K St., NW  
Washington, DC 20006-3817  
Email: [rwuslich@winston.com](mailto:rwuslich@winston.com)  
[zcohen@winston.com](mailto:zcohen@winston.com)

*Counsel for the California Wind  
Energy Association*

## **CERTIFICATE OF SERVICE**

I hereby certify that I have this day served the foregoing document upon each person designated on the official service list in this proceeding in accordance with the requirements of Rule 2010 of the Commission's Rules of Practice and Procedure.

Dated at Washington, D.C. this 29<sup>th</sup> day of May, 2018.

/s/ Carlos L. Sisco

Carlos L. Sisco

Senior Paralegal

Winston & Strawn LLP

1700 K Street, N.W.

Washington, DC 20006-3817

202-282-5000