

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

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Order Instituting Rulemaking to Continue Electric Integrated Resource Planning and related Procurement Processes.

Rulemaking 20-05-003

COMMENTS OF NEXTERA ENERGY RESOURCES, LLC ON PROPOSED 2023 PREFERRED SYSTEM PLAN AND TRANSMISSION PLANNING PROCESS PORTFOLIOS

Lisa A. Cottle Sheppard Mullin Richter & Hampton LLP Four Embarcadero, 17th Floor San Francisco, California 94111 Telephone: (415) 774-3117 Email: lcottle@sheppardmullin.com

Tracy C. Davis NextEra Energy Resources, LLC 5920 W. William Cannon Dr., Building 2 Austin, Texas 78749 Telephone: (512) 236-3141 Email: <u>tracy.c.davis@nee.com</u>

Attorneys for NextEra Energy Resources, LLC

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I. INTRODUCTION

Pursuant to the Administrative Law Judge's Ruling Seeking Comment on Proposed 2023 Preferred System Plan ("PSP") and Transmission Planning Process ("TPP") Portfolios ("ALJ Ruling"), NextEra Energy Resources, LLC ("NextEra Energy Resources") submits these comments on the preliminary busbar mapping results and assumptions regarding the quantity and location of new wind generating capacity from projects in California and Southern Nevada.¹ To achieve California's extraordinary goal of procuring 85 gigawatts ("GW") of new generating and storage capacity by 2035,² the planning assumptions in the PSP and TPP portfolios must reflect (i) accurate data regarding wind potential in identified resource areas, and (ii) realistic assumptions regarding the potential for new projects to be built in those areas in light of available land, cultural sensitivities, local opposition, and environmental constraints. Development of new in-state wind resources has become more challenging and constrained both because there are limited locations in California that have untapped wind potential, and because it is increasingly difficult and costly to site, permit, and reliably interconnect new projects in the locations that remain. Development of new wind projects in Southern Nevada faces similar challenges.

¹ NextEra Energy Resources filed a motion for party status in this proceeding on November 2, 2023 and respectfully requests that its motion be granted and that these comments be accepted and considered in developing the next round of busbar mapping.

² Commission Decision ("D.") 23-02-040 at 3.

NextEra Energy Resources and its subsidiaries have first-hand knowledge of the challenges facing new in-state and Southern Nevada wind projects based on decades of experience developing and operating wind facilities and other generating and storage technologies in California and neighboring states. In California, subsidiaries of NextEra Energy Resources own and operate over 1.2 GW of wind generating capacity located across five counties. Other NextEra Energy Resources subsidiaries own and operate more than 800 MW of solar and battery storage and a 168-mile 230 kV transmission line in Nevada. NextEra Energy Resources (through its subsidiaries) has an additional 4 GW of new generating and storage capacity under development in California.

Based on this experience with existing wind projects and information obtained through ongoing active development of new projects, NextEra Energy Resources has concerns regarding the accuracy of the assumptions in the "Dashboard for the Preliminary Round of Busbar Mapping of the Proposed 2024-2025 TPP Base Case Portfolio" dated October 26, 2023 ("Preliminary Busbar Mapping").³ Specifically, the Preliminary Busbar Mapping appears to overstate the potential new wind generating capacity that can be developed in the Tehachapi, Solano, Northern California, and Southern Nevada regions. Whereas the Preliminary Busbar Mapping assumes 314 MW of new Tehachapi wind capacity, 985 MW of new Solano wind capacity, 491 MW of new Northern California wind capacity, and 1,510 MW of new Southern Nevada wind capacity by 2030,⁴ the reality is that the assumed new capacity is not likely to materialize due to numerous factors that constrain development in those regions, including limited transmission capacity, limited real estate availability, and impacts to the wind resource due to existing generation resources. The specific constraints affecting the Tehachapi, Solano, Northern California, and Southern Nevada regions are described in Section II.3.3 below. Those constraints on development lead to the conclusion that the Preliminary Busbar Mapping's near-term assumptions for new instate and Southern Nevada wind capacity by 2030 are overstated. Because wind potential is not

³ Available at: <u>https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-</u> division/documents/integrated-resource-plan-and-long-term-procurement-plan-irp-ltpp/2023-irp-cycleevents-and-materials/assumptions-for-the-2024-2025-tpp/dashboard_prelimmapping_10-26-23.xlsx.

⁴ Preliminary Busbar Mapping, 2030 Summary Tab, lines 31 (Northern California Wind), 33 (Solano Wind), 34 (Southern NV Eldorado Wind), and 35 (Tehachapi Wind).

likely to increase in those regions, and the siting and permitting constraints are not likely to improve, it follows that the Preliminary Busbar Mapping's larger longer term assumptions for 2034 and 2039 are overstated to an even greater degree.

Although prospects for increasing in-state and Southern Nevada wind capacity are limited, it is critical to maintain a diverse resource portfolio in the PSP that includes wind as a significant source of clean, renewable energy. This leads to the inevitable result that a larger proportion of the assumed new wind generating capacity in the PSP and TPP portfolios should be sourced from out-of-state locations that have significantly higher remaining wind potential and lower barriers to development. NextEra Energy Resources asks Commission staff to review the Preliminary Busbar Mapping's assumptions in light of these comments, and to consider increasing assumptions for out-of-state wind generating resources other than Southern Nevada.

As requested on page 5 of the ALJ Ruling, the comments below are organized in the order in which topics appear in the ALJ Ruling. Although these comments focus on Section 3.3 of the ALJ Ruling (Busbar Mapping), for ease of reference all topic headings in the ALJ Ruling are reproduced in outline format below.

II. COMMENTS

- 1. <u>Aggregation of LSE Plans</u>—No comment.
- 2. <u>Proposed Preferred System Plan Portfolio</u>

The ALJ Ruling states on page 17 that:

Resource potential updates were also implemented, including incorporating the [California Energy Commission's ("CEC's")] new land-use screens for renewable energy. One key change that resulted from this process is an increase in resource potential available for selection for several renewable and storage resources. Of particular significance is the fact that more land-based in-state and out-of-state wind is made available for selection.

As explained in Section II.3.3 below, the assumptions used in the Preliminary Busbar Mapping for new in-state and Southern Nevada wind generating capacity do not accurately reflect the development potential in the Tehachapi, Solano, Northern California, and Southern Nevada regions. The Commission should adjust those assumptions to reflect the resource and development constraints described in Section II.3.3 below.

2.1 <u>Recommended PSP Portfolio</u>

The ALJ Ruling recommends on pages 3 and 19 that the Commission adopt the aggregated portfolio that is based on planning to a greenhouse gas target for the electricity sector of 25 million metric tons by 2035, which is the lower of the two targets that load-serving entities were directed to plan for in D.22-02-004. NextEra Energy Resources does not challenge that recommendation and notes that the resource assumptions on pages 20-21 of the ALJ Ruling should be reduced to reflect the limited wind development capacity in the Tehachapi, Solano, Northern California, and Southern Nevada regions for the reasons explained in Section II.3.3 below.

- 2.2 <u>Sensitivity Cases</u>—No comment.
- 2.3 <u>Production Cost Modeling</u>—No comment.

3. <u>Proposed Portfolios for the California Independent System Operator ("CAISO") TPP</u>

3.1 <u>Reliability and Policy-Driven Base Case</u>

The ALJ Ruling recommends on page 36 that if the 25 MMT Core portfolio is adopted by the Commission as the PSP portfolio, then it would be transmitted to the CAISO as both the reliability and the policy-driven base case scenario to be analyzed by the CAISO in the 2024-2025 TPP. As stated above, the assumed amount of new in-state and Southern Nevada wind generating capacity should be reduced to reflect the limited wind development capacity in the Tehachapi, Solano, Northern California, and Southern Nevada regions for the reasons explained in Section II.3.3 below.

- 3.2 <u>Sensitivity Case</u>—No comment.
- 3.3 <u>Busbar Mapping</u>

The ALJ Ruling states on page 40 that Commission staff has updated the methodology for mapping individual generation and storage resources to busbars on the grid, explaining that: "This process translates geographically-coarse portfolios to plausible network locations for additional TPP modeling by applying specific rules and criteria." The ALJ Ruling describes updates made to the busbar methodology since the last TPP planning cycle, and states on page 42 that busbar mapping of the recommended base case portfolio is currently underway and Commission staff will post the results via a referenced link. Commission staff subsequently posted those results, which are contained in the Preliminary Busbar Mapping that is the focus of these comments.

The Preliminary Busbar Mapping overstates the potential new wind generating capacity that can be developed in the Tehachapi, Solano, Northern California, and Southern Nevada regions. Whereas the Preliminary Busbar Mapping assumes 314 MW of new Tehachapi wind capacity, 985 MW of new Solano wind capacity, 491 MW of new Northern California wind capacity, and 1,510 MW of new Southern Nevada wind capacity by 2030,⁵ the reality is that the assumed new capacity is not likely to materialize due to numerous factors that constrain development in those regions, as described below.

3.3.1 <u>Tehachapi</u>

The Preliminary Busbar Mapping assumes that 314 MW of new wind generating capacity will be added in the Tehachapi region by 2030. This does not accurately reflect the constraints of developing wind projects in the Tehachapi. The Tehachapi region already is the site of several wind generating facilities that have a collective generating capacity of 3.2 GW.⁶ Subsidiaries of NextEra Energy Resources were among the first developers to build wind projects in the Tehachapi region, and they currently own and operate 616 MW of wind capacity in that location. Analyses of the potential for expanding wind capacity in the Tehachapi region have shown clearly that the area is highly constrained due to lack of transmission and due to "waking." Waking is the phenomenon whereby wind turbines create additional turbulence that reduces wind speeds, which negatively affects the generation output from other nearby turbines. Due to the level of saturation of wind projects in the Tehachapi region, waking severely limits the potential to add more wind capacity.

⁵ Preliminary Busbar Mapping, 2030 Summary Tab, lines 31 (Northern California Wind), 33 (Solano Wind), 34 (Southern NV Eldorado Wind), and 35 (Tehachapi Wind).

⁶ The Center for Land Use Interpretation, Land Use Database, <u>https://clui.org/ludb/site/tehachapi-wind-farm</u>.

Additionally, even without the waking constraint, expansion of wind capacity in the Tehachapi is limited because the Windhub Substation in the area is surrounded by operating wind projects and there is little available land for a new project. New projects therefore would not be able to build within the vicinity of a reasonable interconnection at that substation.

Projects in the Tehachapi region also face environmental constraints due to the potential for avian impacts—particularly for protected condor and eagle species—which further compound the difficulty of building new projects in the area. Although the CEC-produced environmental screens may account for avian issues, it is unclear if the economic modeling used in the Preliminary Busbar Mapping accurately reflects the high cost of the output of new wind projects that is necessary to account for revenue loss from curtailments and environmental compliance costs such as long-term monitoring requirements and mitigation measures.

Finally, although the CAISO interconnection queue includes 300 MW of new capacity for the Tehachapi region, some of that reflects proposals to add new battery storage capacity at existing wind sites rather than adding new wind capacity. The queue therefore does not show sufficient commercial interest to justify the assumption that 314 MW of new wind capacity can be built in the Tehachapi region by 2030. In sum, the foregoing factors indicate that the assumed addition of 314 MW of new wind generating capacity in the Tehachapi region by 2030 is not realistic.

3.3.2 <u>Solano</u>

The Preliminary Busbar Mapping assumes that 985 MW of new wind generating capacity will be added in Solano County by 2030. This assumption does not accurately reflect the constraints of developing wind projects in Solano County. Subsidiaries of NextEra Energy Resources own and operate 277 MW of wind generating capacity in Solano County at the High Winds and Montezuma facilities. The potential for adding new wind generating facilities is severely limited, however, because Solano County has implemented a series of prohibitions on the development of additional wind projects in the area.⁷

⁷ In May 2023, the Solano County Board of Supervisors adopted a general plan amendment (Resolution No. 2023-51, "Resolution of the Supervisors of the County of Solano Amending the Solano County General Plan to Update the County's Land Use and Development Policies for Commercial Wind Energy Development (G-23-01)") specifying that no wind turbine greater than 100 feet in height shall be

The CAISO interconnection queue for Solano County shows only 300 MW of new wind capacity, but a large portion of that again represents proposals to add battery storage capacity at existing wind sites. The CAISO queue therefore does not show sufficient commercial interest to justify the assumption that 985 MW of new wind capacity can be built in the Solano County region by 2030. In sum, the foregoing factors indicate that the assumed addition of 985 MW of new wind generating capacity in Solano County by 2030 is not realistic.

3.3.3 North of Sacramento

The Preliminary Busbar Mapping assumes that 491 MW of new wind generating capacity will be added in the Northern California region by 2030. That assumption does not accurately reflect the constraints of developing wind projects in that location. Developers seeking to site wind projects in the North of Sacramento region face substantial local opposition that greatly limits the potential for success. This is largely driven by severe drought conditions and related wildfire concerns around building more utility infrastructure such as transmission.⁸ Concerns about potential cultural impacts to tribal lands in the area also limit the amount of developable wind capacity in the region. The CAISO interconnection queue also does not show commercial interest for this region as it contains only the 200 MW Fountain Wind Project that was rejected by Shasta County and is now undergoing CEC review with significant continuing opposition by local governmental authorities.⁹

3.3.4 Southern Nevada

The Preliminary Busbar Mapping assumes that 1,510 MW of new wind generating capacity will be built in Southern Nevada by 2030. That assumption vastly overestimates the developable

within a line-of-sight of the Travis Air Force Base Digital Airport Surveillance Radar Installation. The entire Solano County Wind Energy Resource Area is within this restricted line-of-sight area. Previous moratoriums on new wind development included Solano County Ordinance No. 2021-1819U, extended to April 6, 2023 by Ordinance 2021-1819U-E.

⁸ "On June 22, 2021, Shasta County Planning Commission (PC) unanimously denied the application for a conditional use permit necessary to build the project, citing testimony received regarding impacts to the local communities and private landowners, potential for increased fire danger, impediments to firefighting efforts, damage to wildlife, and damage to both cultural and tribal resources." https://www.shastacounty.gov/community/page/fountain-wind-project-update

⁹ See <u>https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-OPT-01</u>.

wind capacity and land in the Southern Nevada region. Ninety percent of the potential wind development area in Southern Nevada is federal Bureau of Land Management ("BLM") territory, which means that a rigorous environmental review process under the National Environmental Protection Act ("NEPA") is required for new projects. Development is further constrained by the March 2023 proclamation signed by President Biden for the Avi Kwa Ame National Monument which essentially removes the entire southern tip of Nevada from wind development.¹⁰

There is a wind rich area located north of Interstate 15 near Jean, Nevada, but it largely falls within the "risk" area for the proposed Southern Nevada Supplemental Airport.¹¹ The Southern Nevada Supplemental Airport is planned to be built on the southeast side of Jean, Nevada. The Southern Nevada Supplemental Airport project has been in a planning process for approximately 20 years, and advancement was stalled by the severe economic downturn that Las Vegas experienced after the COVID-19 pandemic. Now that economic conditions in Las Vegas are improving, Clark County Aviation plans to move the Southern Nevada Supplemental Airport project forward because the existing airport has reached capacity. The Table Mountain Wind Project was proposed on the north west side of Jean and went through a full NEPA environmental impact statement process many years ago when the Southern Nevada Supplemental Airport project was moving forward. At that time, concerns regarding the impacts to radar essentially cancelled plans for the Table Mountain Wind Project.¹² It is possible that a new wind project could solve these problems, especially in light of technology advancements, but it would be a long and uncertain process.

BLM concerns related to viewshed impacts near national park land located along the border between California and Nevada from the Primm Substation to North of Beatty are an additional challenge for proposed wind projects in the area. The U.S. Park Service has opposed adding new wind and solar projects in the area due to their perceived visual impacts to the user experience.

¹⁰ Presidential Proclamation Establishing the Avi Kwa Ame National Monument, March 21, 2023, <u>https://www.blm.gov/sites/default/files/docs/2023-03/Nevada_Avi-Kwa-Ame-National-Monument-proclamation.pdf</u>.

¹¹ <u>https://goed.nv.gov/wp-content/uploads/2021/06/Roben-Armstrong.-James-Chrisely-SNSA-GOED-Infrastructure-Development-Working-Group-06.24.2021.pdf</u>

¹² <u>https://windenergyzones.com/claims/nvn----092520</u>.

Death Valley National Park and the Mojave National Preserve also have opposed projects, as has the Lake Mead National Recreation Area. The Nellis Airforce Base training area on the east side of Highway 93 going north from Las Vegas is another constraint that limits development and adds cost and complexity to the permitting process.

The development constraints described above show that the two prime locations for Southern Nevada wind are no longer viable. This calls into question the viability of the projects in the CAISO and Nevada Energy interconnection queues, which likely do not provide accurate data regarding the potential for significant new wind project development in Southern Nevada. Based on the foregoing, it seems apparent that the environmental and technology potential screens used in the Preliminary Busbar Mapping do not provide enough granularity on the limiting geographic and tribal constraints in the Southern Nevada region.

- 4. <u>Analysis Related to MTR Procurement Sufficiency and Petitions for Modification of D.21-06-035 and D.23-02-040</u>—No comment.
- 5. <u>Procurement-Related Recommendations</u>—No comment.
 - 5.1 <u>Potential Additional Procurement to Allow Extension for LLT Resources</u>—No comment.
 - 5.2 <u>Proposal on Long-Duration Energy Storage at Existing Natural Gas Generation</u> <u>Sites</u>—No comment.
- 6. <u>Proposed Reliability Framework for IRP</u>—No comment.
 - 6.1 <u>Background and Definitions</u>—No comment.
 - 6.2 <u>Proposal</u>—No comment.
- 7. Funding for Continued Consulting Support to Commission Staff on IRP—No comment.

III. CONCLUSION

For the reasons explained above, the assumptions in the Preliminary Busbar Mapping for new wind capacity in the Tehachapi, Solano, Northern California, and Southern Nevada regions do not accurately reflect constraints that limit expansion of wind capacity in those regions. Due to those constraints, very little of the assumed new capacity is likely to materialize during the study period. To ensure that wind generation remains a significant resource in the PSP and TPP portfolios, the new wind capacity assumed for these regions should be reduced and assumptions should be increased for wind capacity from regions outside of California that have significantly greater development potential.

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Respectfully submitted,

<u>/s/Lisa A. Cottle</u> Lisa A. Cottle Sheppard Mullin Richter & Hampton LLP Four Embarcadero, 17th Floor San Francisco, California 94111 Telephone: (415) 774-3117 Email: <u>lcottle@sheppardmullin.com</u>

Tracy C. Davis NextEra Energy Resources, LLC 5920 W. William Cannon Dr., Building 2 Austin, Texas 78749 Telephone: (512) 236-3141 Email: <u>tracy.c.davis@nee.com</u>

Attorneys for NextEra Energy Resources, LLC