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**UCS comments on Midterm Reliability Analysis**

*Additional submitted attachment is included below.*

September 7, 2021

California Energy Commission  
1516 Ninth Street  
Sacramento, CA 95814-5512

Docket 21-ESR-01  
*Submitted via electronic comment system*

**RE: Comments of the Union of Concerned Scientists on the Midterm Reliability Analysis**

The Union of Concerned Scientists (“UCS”) appreciates the opportunity to submit these comments on the Midterm Reliability Analysis, presented at the California Energy Commission (“CEC”) workshop on August 30, 2021.

UCS thanks the CEC for all the hard work that went into the Midterm Reliability Analysis. This analysis used probabilistic grid modeling tools to study summer grid reliability under a range of scenarios in 2022-2026. UCS especially appreciates the use of probabilistic grid modeling tools, which provide much more accurate insight into whether or not California will meet grid reliability standards in future summers. UCS is hopeful that probabilistic analyses like this one will allow the California Public Utilities Commission (“CPUC”), the California Independent System Operator (“CAISO”), and the CEC to make more informed decisions about the amount of procurement that is required to ensure grid reliability.

However, the CEC’s probabilistic grid modeling could still be improved. In these comments, UCS offers two specific pieces of feedback on the Midterm Reliability Analysis, which are summarized below:

1. **Weather Correlation:** Critical variables, such as demand and wind/solar profiles were not correlated with weather nor with each other in this analysis. Maintaining the real-world relationship that exists between these variables can have a significant impact on the results of probabilistic analyses, and UCS suggests that future analyses incorporate the relationships between demand and wind/solar profiles.
2. **Redondo Beach:** This analysis assumed that the Redondo Beach Generating Station would be retired by the end of 2021. Given that there is a strong likelihood that the once-through cooling (“OTC”) policy compliance date for Redondo Beach will be extended through the end of 2023, UCS recommends that future analyses explicitly incorporate that possibility.

## **Weather Correlation**

The CEC’s Midterm Reliability Analysis notes that “demand profiles were not weather year correlated to other variables” and that “wind and solar profiles were not weather correlated.”<sup>1</sup> However, maintaining the correlation between these variables is an important component of any robust probabilistic analysis. To give a simplified example of why ignoring this correlation could lead to errors: the CEC analysis may be pairing high demand days (consistent with hot and sunny weather) with low solar production days (consistent with cloudy weather), thereby pairing conditions that are very unlikely to cooccur. The CPUC incorporates the relationships between weather, demand, solar production, and wind production in their SERVUM modeling,<sup>2</sup> and the CAISO also includes these relationships in their PLEXOS modeling.<sup>3</sup>

Given that the unserved energy events in this analysis are concentrated in evening hours when weather-dependent renewables are typically generating at lower levels, UCS recognizes that the lack of correlation between variables may not be significantly impacting the results of this particular analysis. However, to the extent that the CEC continues to conduct probabilistic modeling, examining questions such as resource sufficiency for battery charging (which is listed as a “next step”),<sup>4</sup> maintaining the real-world relationships between weather, demand, solar profiles, and wind profiles will become increasingly crucial for producing accurate analyses.

## **Redondo Beach**

UCS notes that the CEC’s Midterm Reliability Analysis assumes that the Redondo Beach Generating Station units 5, 6, and 8 will be retired by the end of 2021, bringing 834 MW of capacity offline. However, the Statewide Advisory Committee on Cooling Water Intake Structures approved a report that extends the OTC policy compliance date for Redondo Beach to December 31, 2023.<sup>5</sup> While the State Water Resources Control Board has not yet voted on the recommendation, it seems likely that an extension of Redondo Beach’s OTC policy compliance date will be approved. The CEC analysis should explicitly consider this possibility and discuss the potential implications for the findings of this study.

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<sup>1</sup> CEC Midterm Reliability Analysis, slides 88-9.

<sup>2</sup> CPUC Energy Division, *Unified Resource Adequacy and Integrated Resource Plan Inputs and Assumptions – Guidance for Production Cost Modeling and Network Reliability Studies* (March 29, 2019). Available at: [https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/integrated-resource-plan-and-long-term-procurement-plan-irp-ltpp/2019-2020-irp-events-and-materials/unified\\_rairp\\_ia\\_final\\_20190329.pdf](https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/integrated-resource-plan-and-long-term-procurement-plan-irp-ltpp/2019-2020-irp-events-and-materials/unified_rairp_ia_final_20190329.pdf)

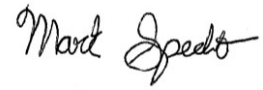
<sup>3</sup> CAISO, *Phase I.A. Stochastic Study Testimony of Dr. Shucheng Liu on Behalf of the California Independent System Operator Corporation* (November 20, 2014) Appendix A, pp. 20-1. Available at: [http://www.caiso.com/Documents/Nov20\\_2014\\_Liu\\_StochasticStudyTestimony\\_LTTP\\_R13-12-010.pdf](http://www.caiso.com/Documents/Nov20_2014_Liu_StochasticStudyTestimony_LTTP_R13-12-010.pdf)

<sup>4</sup> CEC Midterm Reliability Analysis, Slide 85.

<sup>5</sup> State Water Resources Control Board, *2021 Report of the Statewide Advisory Committee on Cooling Water Intake Structures* (March 26, 2021). Available at: [https://www.waterboards.ca.gov/water\\_issues/programs/ocean/cwa316/saccwis/docs/saccwis\\_report.pdf](https://www.waterboards.ca.gov/water_issues/programs/ocean/cwa316/saccwis/docs/saccwis_report.pdf)

UCS looks forward to further participation in the CEC's reliability analyses. Thank you for your consideration of these comments.

Sincerely,

A handwritten signature in black ink that reads "Mark Specht". The signature is written in a cursive style with a horizontal line extending from the end of the name.

Mark Specht  
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