

**Advancing resource adequacy analysis with the GridPath RA Toolkit:
A case study of the Western US**

Berkeley, CA. - Better planning tools will be needed to ensure reliability and avoid cutting off power to consumers as climate change worsens and the Western US continues to add clean energy. GridLab has released a new report, *Advancing resource adequacy analysis with the GridPath RA Toolkit: A case study of the Western US*. A collaboration between GridLab, Moment Energy Insights and Blue Marble Analytics, the GridPathRA Toolkit supports advanced resource adequacy (RA) analysis for the Western United States. It advances the characterization of three phenomena that will be increasingly important for understanding RA in future power systems: weather-driven relationships between load and resource availability; capabilities and constraints of energy limited resources; and transmission flows and regional coordination. The GridPath RA Toolkit refers to the datasets and the algorithms that were developed for this initiative and was applied towards a 2026 Western US RA case study.

“Resource adequacy is a critical challenge that we need to address in the West to support the energy transition. The GridPath RA Toolkit, developed by Elaine Hart and Ana Mileva, demonstrates that robust analysis needs to account for things like resource coordination and weather correlations,” said Ric O’Connell, Executive Director of GridLab. Three west-wide portfolio compositions were analyzed to inform near-term planning decisions along with subregional analysis for areas approximating the CAISO and Western Resource Resource Adequacy Program (WRAP) footprints. The WRAP subregional analysis, when analyzed using a portfolio with less coal resources, showed shortages lasting several hours when the WRAP footprint was treated as an island; when the WRAP footprint was allowed to import power (subject to transmission constraints), these shortages were eliminated.

A core purpose of this initiative was to develop an advanced, public, and transparent toolkit for resource adequacy analysis — the Toolkit leverages publicly available data and the GridPath open-source power system platform. The Western US 2026 case study, which uses these public resources, provides a number of insights that can inform policy and planning decisions, such as the nature of near-term RA risk, the value of coherent weather datasets, and opportunities for efficient solutions to mitigate RA risk.

“The premise of the Toolkit is that publicly available tools and data can support more transparent and robust planning. While the work underscores the importance of capturing weather correlations, it also reveals there is a need for more robust public weather data sets,” said Priya Sreedharan, Program Director of GridLab. The case study highlights that the availability of more high-resolution hourly power system data and information about likely future weather conditions would greatly improve the understanding of RA challenges — the expansion of publicly available hourly wind power datasets to more recent years should be a high priority of policy makers.

The Toolkit can be leveraged by regulators, utilities, researchers, and other stakeholders to conduct independent and publicly accessible RA analysis. While the GridPath RA Toolkit offers a ready-to-use platform for analyzing resource adequacy in 2026 for the three portfolios described in this report, the algorithms and datasets can be adapted to explore different systems, assumptions, and study years.

GridLab is a nonprofit organization with a mission to provide expert capacity and thought leadership to address technical challenges and reliability questions in the implementation of clean energy policies.

Click [here](#) to download the full report and related GridPath RA Toolkit materials.
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