

UNITED STATE OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Reliability Technical Conference

Docket No. AD23-9-000

Prepared Statement of
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Good afternoon Commissioners, Staff, and participants in this important conference. I'm Ric O'Connell, the executive director of GridLab. We are a public interest organization that provides technical assistance to regulators, with a particular focus on grid reliability. I would like to address the concerns raised by several stakeholders in their comments to the EPA and in this conference.

The grid can absolutely be reliable under the proposed EPA rules, but we will need to plan and take action to ensure grid reliability is maintained. The rules codify what is already happening due to economic and policy forces: the retirement of aging coal plants and the introduction of new resources, primarily wind, solar and battery storage. Over 2 TW of these resources are under development and in interconnection queues around the country, in both organized and vertical markets. To maintain grid reliability, we need to ensure these resources enter service in the coming decade so they can provide energy, capacity, and grid services that will replace retiring coal and allow for larger gas plants to transition from energy resources to capacity resources. If we properly plan, we can bring on the right portfolio of new resources to replace coal retirements and augment the energy once provided by gas.

I believe these new rules will actually bolster reliability by providing the regulatory certainty needed to effectively plan in a coordinated manner with actionable deadlines. In the current environment, grid operators are unsure about when resources may retire, increasing uncertainty and making planning harder. The proposed rules have long timelines for enactment, giving states, utilities, and grid operators plenty of time to plan for the transition.

How can we be sure that a future grid without coal and with significant variable generation will be reliable? My organization has performed several detailed studies looking at how the US can decarbonize the power system to 90% carbon free, and the answer is straightforward. We deploy significant quantities of wind, solar and battery storage, and couple this with existing carbon free resources such as nuclear and hydro, and we use the existing gas fleet to provide balancing and capacity. In our work, gas provides just 10 percent of the annual energy of the system but remains a significant capacity and reliability resource. Similar studies have also been done by NREL, Princeton, and many other planning entities. In fact, MISO's own futures used for transmission planning are very similar, retiring most of the coal, and with gas running with single digit capacity factors by 2040.

It's not just studies, power systems across the world are running coal free. The UK will be coal free by this time next year, and coal has generated less than 1% of total energy there so far this year. This is down from coal providing 28% of the UK's electricity in 2010.¹ In the US, CAISO, NYISO, and ISONE successfully completed coal retirements and now operate reliable grids coal free.

¹ UK Energy in Brief 2022

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1130451/UK_Energy_in_Brief_2022.pdf

But what about “essential reliability services?” These services include inertia, fast frequency response, primary frequency response, regulation reserves, operating reserves, and voltage regulation. We believe strongly that while these services are critical, the amount of these services is far less than the firm capacity requirements of grids. In addition, grid forming inverter-based resources can provide these services, and can perform even better than traditional thermal resources. A phased retirement of coal and lower capacity factors of gas will not affect the provisioning of ERS. So, EPA’s 111(d) proposal likely will not impact the availability of these critical grid services, contrary to what some grid operators have suggested.

The commission has already issued several rules that address the planning needs posed by the grid transition. First, order 2023 has directed transmission planning entities to streamline the interconnection process, hopefully accelerating the speed that proposed projects can come online. Second, the Order 896 directs NERC to update the transmission planning rules to account for extreme weather. Winter storms Elliot and Uri have taught us that extreme weather and poor gas performance, not the grid transition, is the primary challenge for grid reliability. Third, Order 901 directs NERC to establish reliability standards for inverter based resources, the technology behind most of the resources waiting in interconnection queues. Having clear standards for inverter based resources is key to maintaining grid reliability.

The commission has asked what else it can do to ensure reliability during the implementation period of the proposed EPA rule. First, FERC could issue a regional transmission planning rule that directs transmission planners to perform long term plans based on best available data. Having a longer term view of the changing resources mix allows transmission planners to envision the grid infrastructure needed to interconnect new resources and maintain reliability. This could also include a national resource adequacy assessment, similar to approaches taken in Europe,² to ensure regional plans also account for changes in neighboring jurisdictions. Second, FERC should conduct a technical conference on capacity accreditation that could modernize and harmonize accreditation approaches across the US. The need to properly and consistently accredit all resources, including variable, thermal, and energy limited resources, is critical to ensure new additions adequately replace retired resources. Finally, FERC could take action on inter-regional transmission, requiring a minimum transfer capacity between regions. The current planning and cost allocation frameworks do not currently support inter-regional lines, despite their high economic and reliability values.

² ENTSO-E, *European Resource Adequacy Assessment*, <https://www.entsoe.eu/outlooks/eraa/>