

October 16, 2024

The undersigned organizations appreciate this opportunity to provide input on PJM's Order No. 1920 compliance process and plans. Please see below for our remarks on each question that PJM has requested input on.

We would like to note the following high-level input on this feedback opportunity. In general, the entire Order No. 1920 scenario development process should provide the opportunity for detailed stakeholder input and review. We recognize that this input is limited to just one component of Factor #1 (policy-driven retirements). To increase transparency, PJM should provide opportunities for all stakeholders to review and comment on assumptions and inputs, including all of the seven required factors in Order No. 1920, at several points in the process. We would appreciate more advance notice and, most ideally, a schedule for the next several months that notes when there will be opportunities for stakeholders to provide input on all seven factors. Thank you.

Sincerely,

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Impacted resources complying with policies

1. Should there be a process for generation owners and/or states to demonstrate that a resource impacted by a policy intends to comply and therefore remain in operation beyond the compliance date?

Yes, there should be a process.

2. If so, what should the criteria be for generation owners and/or states to sufficiently demonstrate that a resource intends to comply with a policy and not otherwise be considered for planned retirement?

Generation owners and/or states should be required to present concrete evidence that a resource intends to comply. This can include (1) an attestation similar to what generation owners must file in the capacity market to certify that they are dual-fuel capable and (2) legally-binding contracts establishing the near-term installation of pollution control technologies. Additionally, generation owners and/or states should be required to provide evidence of offtake via legally-binding agreements, such as power purchase agreements (PPAs), that extend beyond the compliance date required by the state or federal regulation. Documents suggesting intent to comply without firm contracts or attestations should not be considered sufficient, but retirements could be probabilistically discounted if generation owners and/or states indicate uncertainty regarding their intent to comply (i.e., are unable to provide concrete evidence), especially for longer-term projections.

Additionally, there must be some kind of consequence for any false documentation, attestation, or other representation of intent to comply that does not manifest. For instance, PJM can refer generation owners and/or states that make false claims to the FERC Office of Enforcement.

Generation owners should also be required to submit documentation of any communications or reporting that they are providing to state and federal regulators, including the Securities and Exchange Commission (SEC).

To share an example: for EPA's Greenhouse Gas Power Plant Rule, PJM should ask coal owners impacted by the rule to provide any details on their plans for compliance, with specific dates. There are multiple compliance pathways for coal plants in the Greenhouse Gas Power Plant Rule, such as to co-fire with gas or install carbon capture and sequestration (CCS), which should be captured in PJM's planning.

PJM should also consider implementing a threshold based on plant life (e.g., age, heat rate, historic dispatch rate, or a combination of these factors) above which units will receive greater scrutiny or have to meet a higher evidentiary bar to establish that they will be staying online.

PJM should also enable third parties (i.e., entities besides generation owners and states) to submit input on their view of generator retirements. For instance, third parties such as nonprofit or academic organizations may have alternative evidence, indicators, or information about

specific plant retirements in the near future, including based on market forecasting. PJM could then take this into consideration when making determinations about forecasted retirements.

Corporate retirement commitments

These are publicly announced deactivations made by generation owners but are still “unofficial” (meaning they have not submitted a deactivation notice to PJM)

1. How should a process work for obtaining awareness of private retirement commitments made by generation owners without an official deactivation notice submitted to PJM?

PJM should open up a designated time window for stakeholders, including states and generation owners, to submit information on private retirement commitments. This process should align with the time for stakeholders to submit other long-term planning inputs to streamline stakeholder engagement. Input submitted by stakeholders should be made public to the best extent possible, excluding potentially commercially sensitive information (to be specified by the stakeholder submitting input). Additionally, we recommend that PJM clarify the terminology used to refer to these retirements and utilize the term “private retirement commitment.” “Corporate retirement commitments” may be confused with the “corporate commitments” section of Order No. 1920, which pertains to corporate entities’ procurement of energy generation resources.

2. How should PJM verify that the generation owner intends to retire by the publicly announced date?

PJM should consider announcements of the intent to retire that are made to any state or federal regulator to be verified. For any other announcements of the intent to retire, PJM should consider factors such as (1) the age of the facility; (2) whether the facility has been earning revenues in the capacity market or energy market; and (3) the nature of the announcement that the facility has made. PJM should also engage in direct communication with the facility. PJM should further require legally binding proof of anticipated retirement, such as a memorandum of understanding between the generator and offtaker. Such proof should explicitly outline the timeline for generator retirement and, to the extent possible, specify cause(s) for retirement.

Additional policies not currently considered

1. Are there other specific policies that PJM should be accounting for when identifying policy-driven deactivations? If so, please provide the policy and indicate how it would impact a resource from remaining in operation.

There are a host of policy and economic factors beyond the list that PJM is presently requesting feedback on that drive deactivations which must be considered as scenario inputs. These include state and federal policies that specify targets for new clean generation and state and federal policies that incentivize new generation or that place a price on greenhouse gas emissions or that otherwise seek to reduce greenhouse gas emissions. In the next section, we will also discuss economic factors related to the age and efficiency of a power plant.

In general, PJM should account for state-level policies that accelerate new generation entry and thus may indirectly impact generator retirement (e.g., Renewable Portfolio Standards or Clean Energy Standards). These policies can be incorporated into economic modeling of generator entry and exit as part of capacity expansion modeling. PJM could also assume that for every additional amount of new generation added as a result of these state-level policies, less economic generators will retire as a result. For emissions-based policies (e.g., Maryland Climate Solutions Now Act), PJM should engage in active discussion with relevant state entities to discuss how to model the impacts of these policies, including impacts on generator retirements.

Examples of these state-level policies are listed below. A more extensive inventory can be found in Zach Zimmerman et al., [*Transmission Planning for PJM's Future Load and Generation: Version 1*](#), Americans for a Clean Energy Grid, May 2024.

- Delaware: RPS/CES set at 25% by 2025, 28% by 2030, 40% by 2035; Reduce statewide emissions 50% from 2005 levels by 2030 and 100% by 2050.
- DC: RPS/CES set at 100% by 2032.
- Maryland Climate Solutions Now Act: RPS/CES set at 50% by 2030, 100% by 2045; Reduce statewide emissions by 60% from 2006 levels by 2031 and reach statewide net-zero emissions by 2045.
- Michigan: RPS/CES set at 15% by 2029, 50% by 2034, 60% by 2035, 80% by 2039, 100% by 2040.
- New Jersey: RPS/CES set at 35% by 2025, 50% by 2030; Executive Order sets goal of 100% clean energy by 2035.
- North Carolina: RPS/CES set at 12.5% by 2021; Electric generating facilities reduce carbon dioxide emissions by 70% from 2005 levels by 2030 and carbon neutrality by 2050.
- Virginia: RPS/CES set at 100% by 2045 for Phase II utilities and 2050 for Phase I utilities.

We specifically note that North Carolina's [*Clean Energy Plan*](#) includes an explicit statutory requirement that electric generating facilities reduce carbon dioxide emissions by 70% from 2005 levels by 2030 and reach carbon neutrality by 2050. This policy must be included in PJM's modeling of policies that directly impact generators.

In addition to these new generation entry policies, PJM should also be considering market-based incentive policies like the Regional Greenhouse Gas Initiative (RGGI) and the Inflation Reduction Act (IRA) to the extent that they contribute to retirements that are additional to the contributions of other state and federal policies. PJM should conduct preliminary economic modeling and forecasting to examine the impacts of market-based incentive policies like IRA and RGGI on retirements, and determine if these retirements are adequately captured in state and federal policies. We understand that there are complex economic dynamics that ultimately influence a generator's decision to retire, but PJM should attempt to quantify the impacts of RGGI and IRA on retirements before making a decision about including or not

including them in scenario planning. PJM should work to fully account for the system and price impacts of market-based incentive policies.

Additionally, Order No. 1920 obligates PJM to consider the impacts of local policies. To identify relevant policies that may contribute to power plant retirement, PJM should conduct direct outreach to local governments as well as stakeholders with expertise in local policies, such as the PJM Cities and Communities Coalition.

Other assumptions about policy-driven retirements

1. Is there anything else that PJM should be considering on this topic?

Given the opportunity under Order No. 1920 to utilize multiple scenarios in long-term planning, we recommend that PJM not limit its definition of retirements to be those solely driven by policy. Instead, we recommend that PJM develop a comprehensive approach to modeling retirements that is grounded in economic factors in addition to policy. This modeling should also draw on many of the additional policies we list above in “Additional policies not currently considered,” which we believe are essential to consider in the broader context of the economic environment in which PJM generation is operating.

As an example, MISO in its Long-term Regional Transmission Planning (LRTP) process utilizes age-based retirements. Any thermal resource is anticipated to retire by a certain age. This age threshold is set by MISO staff, with stakeholder input, based on up-to-date information on anticipated thermal plant lifespans. For instance, in the latest round of LRTP, coal units were retired after 46, 36, and 30 years across MISO’s three Futures scenarios, respectively. The 46-year threshold for Future 1 was set using the average age of coal units based on US Energy Information Administration data. Gas units were split into combined cycle (CC) and Other (e.g., combustion turbine). Age thresholds for CC units were set at 50, 45, and 35 years, respectively, and at 46, 36, and 30 years for Other units, respectively, across the three Futures. Oil units’ age thresholds were set at 45, 40, and 35 years, respectively, while utility-scale wind and solar thresholds were set at 25 years across all three Futures. Wind units were repowered in the year following retirement with new 100-meter hub height turbines, dependent on location, with higher capacity factors. Nuclear and hydroelectric plants were retired based on public announcements. For more information, see p. 21 of [MISO Futures Report: Series 1A](#).

PJM should do such economic-based modeling of plant retirements based on plant life, broadening its modeling to utilize not just age thresholds (as MISO does) but also incorporate other related factors, such as heat rate and plant dispatch rate (based on historic data). PJM should conduct such modeling across all three Order No. 1920 compliant scenarios, scaling up levels of plant retirements with scenario ambition. PJM should also employ transparent data assumptions, such as MISO’s utilization of EIA data to set its coal unit age-based retirement threshold for Future 1. PJM should also incorporate policies that can impact the economic conditions under which generators are operating, such as state policies that drive new generator entry and market-based incentive policies (e.g., RGGI).

Limiting its retirement outlook to only those that are deemed to be policy-driven will make PJM's long-term planning exercise overly myopic. Integrating economic-based modeling into scenarios will provide more accurate results and improve transmission planning outcomes to streamline construction and reduce overall costs for consumers. It will also help contextualize public policies among broader economic conditions.