

Order 2023 Compliance Proposals

December 21, 2023

About Advanced Energy United (“United”)

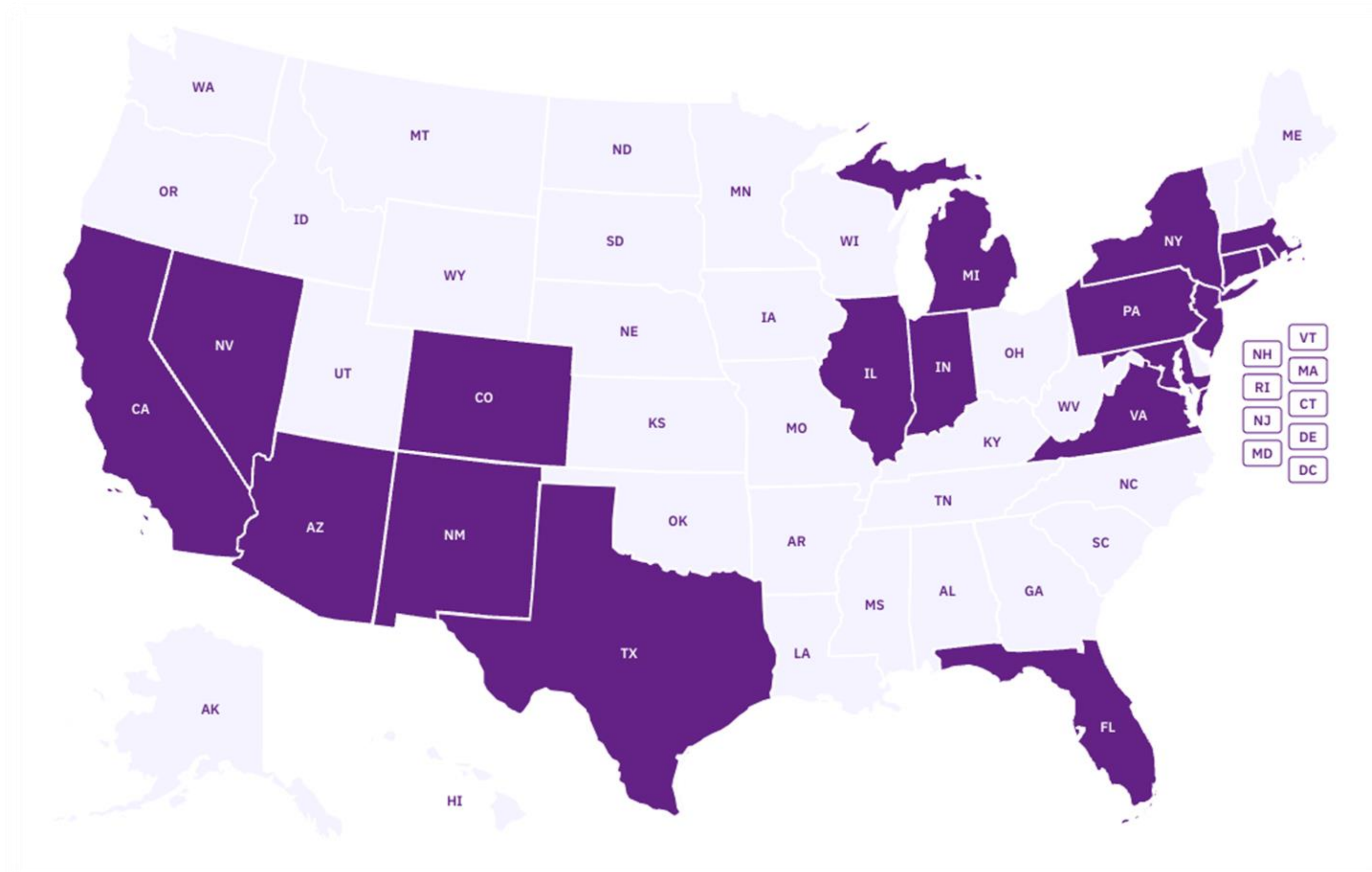
We are the association of businesses united in our mission to achieve 100% clean energy in America.

We provide:

- ✓ **Credible research and analysis** about the advanced energy industry
- ✓ **Knowledge about technologies** and services available to consumers and the power grid
- ✓ **Policies and regulations** that drive the transition to 100% clean energy in the power sector, the built environment, and in transportation.

Where We Work

Regulatory, legislative, and gubernatorial engagement in 18+ states.






Energy market advocacy at Federal Energy Regulatory Commission (FERC) and Regional Transmission Organizations (RTOs) / Independent System Operators (ISOs)

Policy engagement with Congress and federal agencies relating to infrastructure investments and manufacturing

Our Members

100+ business members providing solutions

Advanced Energy United Leader

Our Member Companies:

- Develop renewable energy projects that serve everyone from homes to utilities
- Build, enhance, and strengthen the transmission grid
- Create solutions to manage data and demand making energy use more efficient
- Provide storage solutions to increase reliability
- Support clean energy development through large-scale purchasing commitments
- Build electric vehicles and the charging infrastructure to support them

And so much more!

Order 2023 Compliance Proposals Summary

United Proposals

1. Use Order 2023's 150-days requirement for the Cluster Study timeline.
2. Implement a robust and transparent Alternative Transmission Technology (ATT) evaluation process.
3. Explicitly include Dynamic Line Rating as an approved ATT.
4. *Allow for Electrically Proximate POI Alternatives.
5. Right-size the \$5M readiness deposit to \$2.25M.
6. Allow ICs to reduce project size after completion of the Cluster Study Report before Cluster Study Report Meeting.

United-Supported Proposals

1. [New Leaf Proposal #1](#): Continue to advance studies for late-stage projects in the interim, before transitional studies begin.
2. [New Leaf Proposal #2](#) – Fairly calculate withdrawal penalties for all projects in the transitional cluster.
3. [New Leaf Proposal #3](#) - Modify study deposits to reflect SGIP v. LGIP / NRIS v. CNRIS.
4. [New Leaf Proposal #6](#) - Improve transparency regarding cluster and/or subgroup study methodologies, as well as cost allocation methodologies.
5. [Cypress Creek Proposal #1](#) - ISO should accept letter of credit as a form of deposit for the transition and standard cluster processes.
6. [Cypress Creek Proposal #2](#) - ISO should consider cluster cycle dependencies.

Why we are making these proposals

United commissioned a [whitepaper by Daymark on interconnection reforms](#) that identified numerous recommendations on how ISO-NE can comply with Order 2023 in a way that optimizes necessary improvements. The objectives of the reforms and the following proposals include:

- **Reliability:** Ensure reliability through an interconnection process that allows new resources to replace retiring resources and meet load growth in a timely manner;
- **Efficiency:** (1) Improve the efficiency and timeliness of the cluster study process and (2) provide greater information access and predictability to advance commercially ready projects;
- **Cost:** Reduce interconnection costs and pass on savings to ratepayers;
- **Clean energy requirements:** Interconnect clean, emissions free resources in a timely manner to help states meet clean energy and climate requirements.

United Proposals

Proposal #1: 150 Days Cluster Study Timeline

Change the proposed Cluster Study duration from 270 days to the Order's 150 days requirement.

- **ISO-NE's proposal:** Seek an Independent Entity Variation (IEV) from Order 2023's 150 days Cluster Study requirement and instead use a 270 days timeframe.
- **United's proposal:** Adopt the Order's 150 days study requirement.

Proposal #1: 150 Days Cluster Study Timeline

Rationale

- FERC explicitly recognized ISO's request for 270 days (see [FN 562 of Order 2023](#)) and still imposed the 150 days requirement.
- Recognizing there are challenges and constraints in conducting cluster studies, we are concerned the filing will be rejected and interconnection study timelines will not be significantly improved without a 150 days requirement. Submitting the 270 days proposal therefore introduces significant regulatory risk.
- It is in the spirit of O. 2023 to accelerate interconnection study and processing timeframes, and we must adhere to the Order's requirements to do so.
- The existing IEV for study timelines does not have much bearing on the IEV for this compliance proceeding as facts have changed since the existing IEV was approved. Here, the Order explicitly sought to accelerate processing times and rejected ISO's request to use a 270 days timeline in the Order.

This proposal is supported by the [interconnection whitepaper's](#) recommendations

Proposal #1: 150 Days Cluster Study Timeline

Tariff Redline

Schedule
22 LGPI,
S. 7.4
“Cluster
Study
Procedure
s”

-The System Operator and Interconnecting Transmission Owner shall use Reasonable Efforts to complete the Interconnection System Impact Cluster Study within ~~two hundred and seventyone-hundred and fifty~~ (270150) Calendar Days of the close of the Customer Engagement Window.

Make the same change (edit 270 days to 150 days) in LGIP for:

- S. 3.5.2.1 (B), (C), & (F)
- S. 3.5.4 (i)

Proposal #2: ATT Selection Transparency

Implement a robust and transparent process for evaluating Alternative Transmission Technologies (ATTs).

- **ISO-NE's proposal:** Adopt the Order's pro forma generic requirement to consider ATTs when evaluating options for network upgrades to accommodate the requested service level.
- **United's proposal:** The compliance filing should require ISO-NE to provide a detailed description of the process it will follow to evaluate ATTs to ensure decisions on whether to use an ATT will be transparent and clear. ISO should codify requirements such as: establishing what selection criteria will be used, permitting Interconnection Customer (IC) to identify potential ATTs at the Scoping Meeting during the Customer Engagement Window; providing all accompanying data and materials that support the basis for any decisions made; explaining why ATTs were or were not selected; and rendering a full explanation of the final decision to the IC and Transmission Owner (TO).

Proposal #2: ATTs Selection Transparency

Rationale

- This proposal will drive transparency in the ATT adoption and decision-making process and make it more clear on whether a fair evaluation was completed. Transmission Owners (TOs) and interconnection customers (ICs) alike will want an unambiguous record for why an ATT is or is not selected to prevent questions and disputes.
- Under O. 2023, the transmission provider, not the IC, bears the responsibility of proving that an ATT is inconsistent “with good utility practice, applicable reliability standards, and other applicable regulatory requirement.” (Order 2023, P 1578). Without such provisions, a black box into ATT selection or omissions may begin to form and lead to arbitrary or discriminatory outcomes, real or perceived.
- TO’s will benefit if they can understand ISO’s decisions that may obligate them to use an ATT solution.
- In many cases, it easier for TOs to use an ATT than to build a new line.

This proposal is supported by the [interconnection whitepaper’s](#) recommendations

Proposal #2: ATTs Selection Transparency

Tariff Redline

Add Subsection
(7.3.1) within
Section 7.3

Italic text is
United revisions,
normal text is O.
2023 pro forma
requirement.

7.3.1 Evaluation of Alternative Transmission Technologies.

The Cluster Study shall evaluate the use of static synchronous compensators, static VAR compensators, advanced power flow control devices, transmission switching, synchronous condensers, voltage source converters, advanced conductors, tower lifting, and *dynamic line ratings*. *Interconnection Customers shall be permitted to identify dynamic line rating solutions in their Interconnection Request and raise alternative transmission technologies during the Cluster Study Scoping Meetings.* Transmission Provider shall determine whether the above technologies should be used, consistent with Good Utility Practice and other applicable regulatory requirements. Transmission Provider shall *provide all affected Interconnection Customers and Transmission Owners with (1) a list of selection criteria for evaluating alternative transmission technology; (2) a detailed explanation of the results of the Transmission Provider's evaluation articulating why each technology was or was not selected in the Cluster Study Report; (3) all accompanying materials and supporting data that informed the evaluation.* /

Proposal #3: Dynamic Line Rating (DLR) Inclusion

DLR should be explicitly enumerated in the compliance filing as an approved advanced transmission technology option.

- **ISO-NE's proposal:** Omit any mention of DLR as an ATT that can be considered for purposes of network upgrades and solution identification
- **United's proposal:** DLR should be explicitly enumerated in the compliance filing as an approved ATT option that is considered in the interconnection network upgrade and solution identification process.

Proposal #3: Dynamic Line Rating (DLR) Inclusion

Rationale

- While Order 2023 states that DLR technology* may be less beneficial in the interconnection context than in the transmission operations and planning context -- the statement concedes by implication that DLR may be equally or more beneficial. Many lines are chronically underrated regardless of weather and congestion parameters, which themselves are often inaccurate precisely because DLR is not used.
- DLR's omission may render Commission-jurisdictional rates unjust and unreasonable and could also preclude interconnection customers from interconnecting in a reliable, efficient, transparent and timely manner, contrary to the Commission's stated goals.
- Order 2023 does not preclude RTOs from requiring the consideration of DLRs, meaning ISO-NE has discretion to adopt this amendment, which is not overly burdensome as transmission planning and interconnection processes typically use similar or identical study processes (for example, steady-state, short circuit, and stability analysis) and share common models of the transmission system representing expected future system conditions such as Summer Peak or High Wind Low Load.

This proposal is supported by the [interconnection whitepaper's](#) recommendations

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*Proposal #4: Alternative POI

Consider opportunities for TOs to review electrically proximate POIs earlier in the process

- **ISO-NE's proposal:** Still seeking clarification and assessing redlines.
- **United's proposal:** Electrically proximate POIs can be implemented without materially impacting a study process based on our experience. Examples include changes to the same POI on the same transmission line at a different end of the project, or a different angle of entry into the same bus. We understand the current process enables the TOs and ICs to work together and that this accommodation is already available later in the process. We want to confirm the ISO's read on this and whether they would maintain this optionality in the new process.

Redlines: LGIP S 3.4.6 "Cluster Study Scoping Meetings" and S. 3.1 "General"

We interpret ISO's redlines to have incorporated this proposal and seek confirmation that is true.

Proposal #5: Right-size the \$5M readiness deposit to \$2.25M

Right-size the readiness deposit for our region by reducing it from \$5 million to \$2.25 million

- **ISO-NE's proposal:** Adopt Order 2023's \$5 million readiness deposit requirement
- **United's proposal:** Right-size the readiness deposit for ISO-NE's interconnection queue's unique characteristics, including relatively less backlog in the queue and smaller average project size.

Proposal #5: Right-size the \$5M readiness deposit to \$2.25M

Rationale

- Order 2023's high \$5 million security deposit was set at that amount to weed out speculative projects and encourage only mature projects to proceed to the transition cluster study.
- However, applying a flat \$5m deposit to all projects is inappropriate for our region.
- If ISO is correct and the queue backlog is not as significant an issue in this region, it should be sufficient to ensure full funding of the potential withdrawal penalty, with no 'extra' disincentive to force projects to drop out.
- \$5m makes sense in RTOs like PJM and MISO, where average project sizes in the queue are more than double that of our region, but it far less appropriate for ISO-NE which has smaller projects and relatively less of a queue backlog.
- Furthermore, \$5 million disproportionately impacts commercially ready smaller projects that may be comparably mature. We do not feel as though the Order meant to discourage participation of smaller projects that were otherwise commercially ready to proceed through the queue.

Proposal #5: Right-size the \$5M readiness deposit to \$2.25M

Rationale (cont.)

- Since we are assuming the TCS will have a study deposit of \$250k under the LGIP, the max amount of readiness deposit needed to fully fund a 9x withdrawal penalty would be \$2.25 million.
- This amount will cover the full cost of the study at the high end of the range (\$250k) and the 9x penalty.
- If the IC proceeds and accepts its upgrades and cost responsibilities coming out of the TCS, it will need to provide a deposit to be applied to construction costs; there is no basis for collecting that portion of the deposit at the start of the cluster rather than once the IC has decided to proceed.

Proposal #5: Right-size the \$5M readiness deposit to \$2.25M

Rationale (cont.)

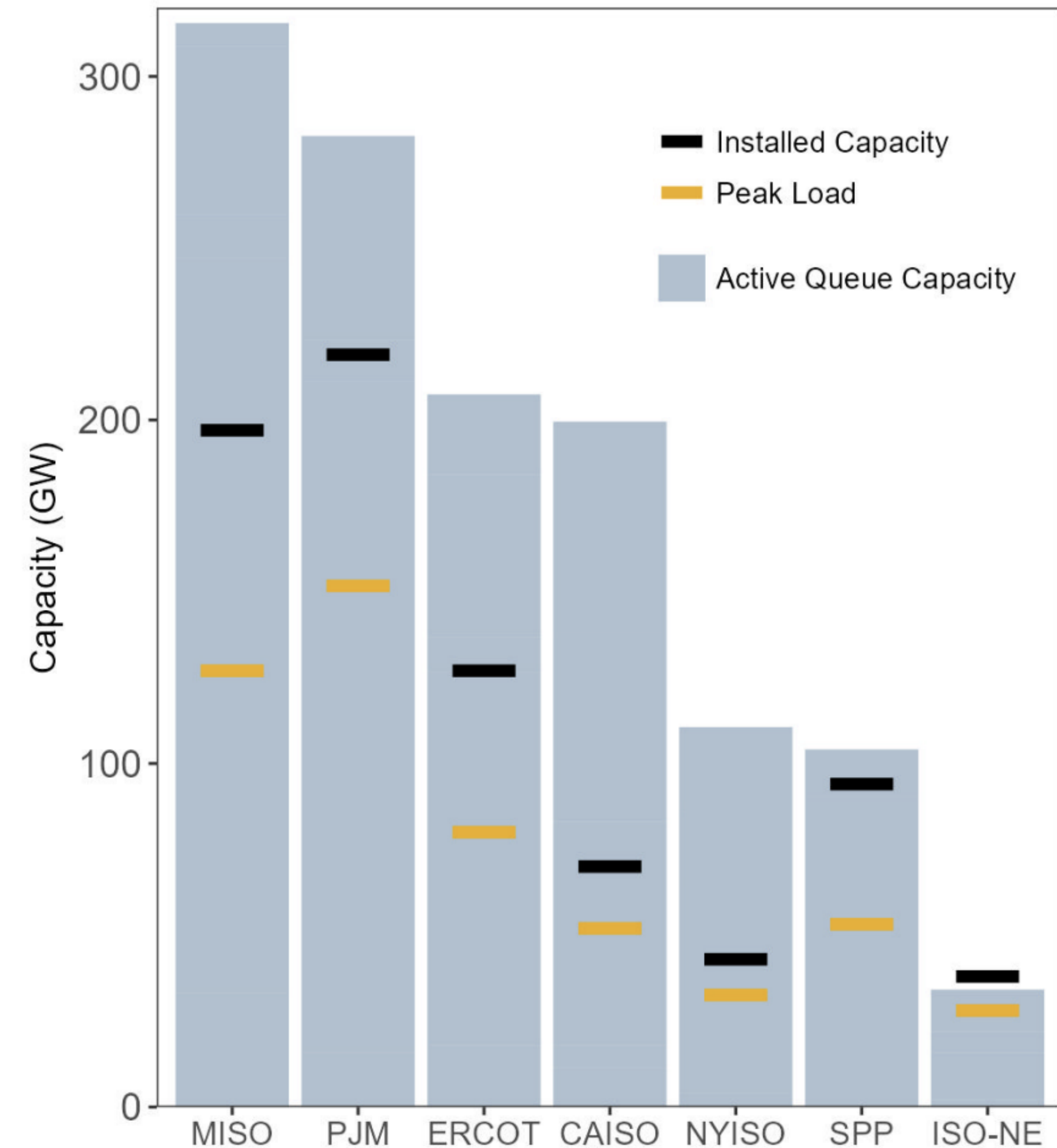
Takeaway: There is less queue backlog and smaller average project sizes in ISO-NE relative to other RTOs

Average Project Size in Queue by RTO

RTO/ISO	Avg Project size (MW)
SPP	200
MISO	173
ISO-NE	88
PJM	87

Source: SPP, MISO, ISO-NE, and PJM Public Queue Data

Active Queue Capacity by RTO



Source: *Queued up*, LBLN

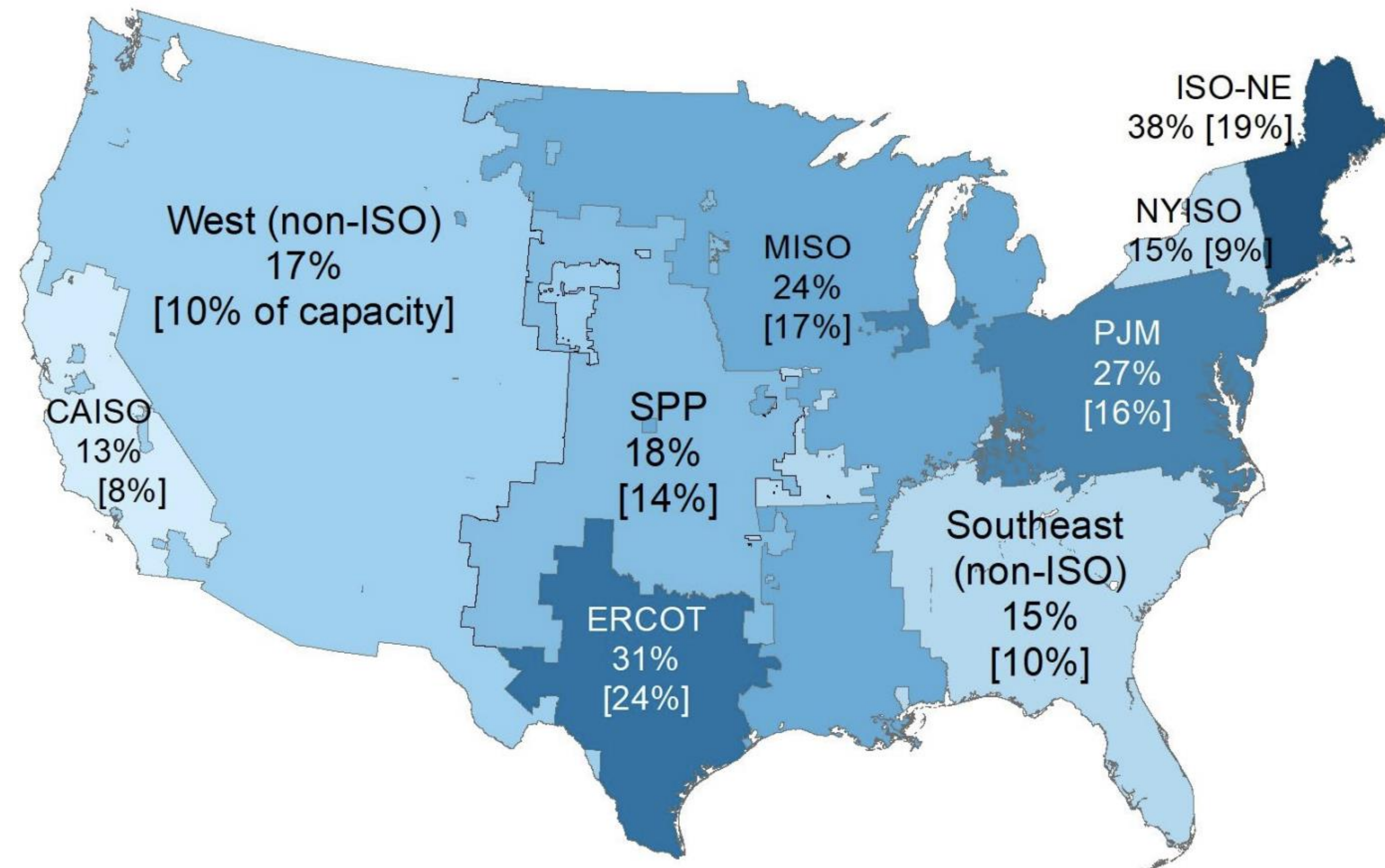
https://emp.lbl.gov/sites/default/files/queued_up_2022_04-06-2023.pdf

Proposal #5: Right-size the \$5M readiness deposit to \$2.25M

Rationale (cont.)

Takeaway: Completion rates for projects are notably higher in ISO-NE relative to other RTOs, suggesting there are fewer speculative projects.

Project Completion Rates by RTO



Source: *Queued up*, LBLN

https://emp.lbl.gov/sites/default/files/queued_up_2022_04-06-2023.pdf

Proposal #5: Right-size the \$5M readiness deposit to \$2.25M

Tariff Redline

Schedule
22 LGIP, S.
5.1.1.2 (2)
“Transition
al Cluster
Study”

(2) A deposit of ~~two million fivetwo-hundred and fifty thousand million~~ dollars (~~\$5,000,000~~ \$2,250,000) for Interconnection Requests seeking NRIS or CNRIS, and one million (\$1,000,000) for Interconnection Requests that completed Interconnection Studies for NR Interconnection Service and are seeking to change from NR Interconnection Service to CNR Interconnection Service, in the form of an irrevocable letter of credit in a form and from a financial institution acceptable to System Operator, as described on the System Operator’s public website, or cash where cash deposits shall be treated according to Section 3.7 of this LGIP. The letter of credit

Proposal #6: Reducing Project Size

Allow ICs to reduce project size after completion of the cluster study before restudy.

- **ISO-NE's proposal:** ICs cannot reduce their project size/requested service level whatsoever after the cluster process commences.
- **United's proposal:** Provide ICs the ability to reduce project size 15% or 60% at the end of the cluster study, specifically after the cluster study report but before the Cluster Study Report Meeting. Reductions of up to 15% are explicitly required in Order No. 2023 LGIP Sec. 4.4.2

Proposal #6: Reducing Project Size

Rationale

- Giving ICs the ability to reduce their project size at this stage can avoid triggering burdensome network upgrades that may otherwise prompt a withdrawal.
- It is a best practice in other RTOs including PJM, MISO, and SPP to allow large reduction (50-100%) after completion of the steady state and short circuit analyses.
- ISO-NE currently allows a 60% reduction in project size after the feasibility study.
- Reducing project size can simplify the cluster study process by preventing withdrawals and streamlining restudy. There are fewer study assumptions examining a withdrawal of energy capacity injection versus a modest reduction in service level, meaning restudies will be simpler and faster. This will save ISO-NE and ICs time and resources.
- Reducing size between the Cluster Study Report and the Cluster Study Report Meeting allows ISO a chance to adjust prior to the meeting.

Proposal #6: Reducing Project Size

Tariff Redline

Section
4.4.3 of
LGIP

4.4.3.1 Interconnection Customer may request, and System Operator shall evaluate, the addition to the Interconnection Request of a Generating Facility with the same Point of Interconnection indicated in the initial Interconnection Request, if the addition of the Generating Facility does not increase the requested Interconnection Service level by more than 15 percent, pursuant to Section 7.4. System Operator must evaluate such modifications prior to deeming them a Material Modification, but only if Interconnection Customer submits them prior to the return of the executed Facilities Study Agreement by Interconnection Customer to System Operator. Interconnection Customers requesting that such a modification be evaluated must demonstrate the required Site Control at the time such request is made.

Proposal #6: Reducing Project Size

Tariff Redline

Section
7.4 of
LGIP, P 2:

~~The System Operator and Interconnecting Transmission Owner shall use Reasonable Efforts to complete the Interconnection System Impact Cluster Study within two hundred and seventyone hundred and fifty (270150) Calendar Days of the close of the Customer Engagement Window.~~

~~Within ten (10) Business Days of simultaneously issuing finishing a Cluster Study Report to each Interconnection Customer within the Cluster and posting such report on OASIS, the System Operator shall convene a Cluster Study Report Meeting. after the receipt of the Interconnection System Impact Study Agreement, study deposit, demonstration of Site Control, if Site Control is required, and required technical data in accordance with Section 7.2. If System Operator uses Clustering, the System Operator and Interconnecting Transmission Owner shall use Reasonable Efforts to deliver a completed Interconnection System Impact Study within the times specified in this Section 7.4. Once the System Operator has furnished the Cluster Study Report but prior to the Cluster Study Report Meeting, the modifications permitted under this Section shall include specifically: additional 15 percent decrease of electrical output of the proposed project through either (1) a decrease in plant size (MW) or (2) a decrease in Interconnection Service level.~~

Proposal #6: Reducing Project Size

Tariff Redline

Section 7.5 of LGIP: Add additional section in between sections 2 and 3:

(2) If no Interconnection Customer withdraws from the Cluster after completion of the Cluster Study or Cluster Restudy or is deemed withdrawn pursuant to Section 3.7 of this LGIP after completion of the Cluster Study or Cluster Restudy, System Operator shall notify Interconnection Customers in the Cluster that a Cluster Restudy is not required.

(3) If one or more Interconnection Customers exercises their right to decrease the electrical output of the proposed project by up to 15 percent through either (1) a decrease in plant size (MW) or (2) a decrease in Interconnection Service level, the System Operator and Interconnecting Transmission Owner shall determine whether a Cluster Restudy is necessary as a result and if so, shall notify Interconnection Customers in the Cluster and post on OASIS that a Cluster Restudy is required within thirty (30) Calendar Days after the Cluster Study Report Meeting.

(34) If one or more Interconnection Customers withdraw from the Cluster or are deemed withdrawn

United-Supported Proposals

New Leaf Proposal #1: Continue late-stage SISs

Continue to advance studies for late-stage projects in the interim, before transitional studies begin.

- New Leaf is asking ISO-NE to provide the Committee with an assessment of which Queue Positions with an SIS in-progress have an estimated SIS completion date prior to the commencement of the transitional studies (7/31/24 per New Leaf's interpretation of the ISO's updated schedule), and whether ISO-NE could somehow "commit" to completing those studies, subject to Interconnection Customer opt-in.

This proposal is supported by the [interconnection whitepaper's](#) recommendations

New Leaf Proposal #2: Rectify withdrawal penalty

Reset the study costs incurred for all projects in the queue to zero as of the Eligibility Date for purposes of assessing withdrawal penalty in the event of withdrawal.

- This creates a level playing field for all projects electing to proceed with the Transitional Cluster and does not disadvantage those that have been in the queue prior to the issuance of Order 2023. The pro-forma language of the Order was designed to encourage advanced stage projects to proceed through the queue, so calculating the withdrawal penalty to include study costs incurred prior to the transition cluster study/Effective date would do the opposite by deterring these projects from proceeding. The Order does not seem to contemplate this possibility and leaves RTOs discretion on deciding from what date study costs.

New Leaf Proposal #3: Conform Study Deposits

Modify study deposits to reflect SGIP v. LGIP.

- Best practice is to tailor deposit amount to project size.
- Proposal would require:
 - \$250k deposit for LGIP projects > 20 MW.
 - \$100k for SGIP projects < 20 MW.

We interpret ISO's redlines to have incorporated this proposal and seek confirmation that is true.

New Leaf Proposal #6: Enhance Cluster Transparency

Improve transparency regarding cluster and/or subgroup study methodologies, as well as cost allocation methodologies.

- ISO should define its criteria regarding subgroups, study methodologies such as system stresses, and proportional cost allocation methodology.
- Some RTOs are not good about sharing assumptions in study methodologies and this creates huge power imbalance b/w RTO and IC; Network Upgrades (NUs) are stipulated and IC may determine it excessive because they don't have same information to determine whether the NU value is appropriate.
- ISO should provide study assumptions used for model on same day it posts the Cluster Study.
- Methodologies can be posted early.

This proposal is supported by the [interconnection whitepaper's](#) recommendations

Cypress Creek Proposal #1: Accept LOC for Deposit

ISO should align with the LGIP Pro Forma language to allow a letter of credit (LOC) to be an acceptable form of deposit.

- ISO should accept a LOC for the commercial readiness deposits in both the transition and in the standard process going forward. Order 2023 made it clear that cash or a LOC was acceptable for the transition process, so allowing it under the standard process is a reasonable, common-sense option.
- This is an industry standard and the bare minimum.
- The Order's pro-forma language is also clear to LOC should be acceptable.

We interpret ISO's redlines to have incorporated this proposal and seek confirmation that is true.

Cypress Creek Proposal #2: Consider Cluster Dependencies

ISO should consider cluster cycle dependencies and adopt a phased and staggered cluster study approach.

- ISO should stagger the start of the subsequent cluster to maximize information prior to or during the customer engagement window. This would allow for more coordination between clusters and allow more nuance within each cluster study.
- The staggered approach would mean that subsequent clusters can begin before the conclusion of the preceding cluster, which would speed up the interconnection overall and lead to a more efficient process.
- When a cluster needs a restudy, it will delay and pause the subsequent cluster. However, if the preceding cluster runs smoothly without withdrawal, then it can start the subsequent cluster earlier and save time.
- If Cluster (A) causes Cluster (B) delays, then ISO may be free of blame for delay penalties in Cluster (B); penalty clock would need to pause and resume and soon as cluster resumes.

Conclusion

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Order 2023 is just the “first step” in reforms necessary for an efficient, reliable interconnection process

- United looks forward to working with ISO-NE, its members, and other stakeholders to continue the dialogue on future reforms to interconnection beyond Order 2023 that will be needed to maintain reliability and cost effectively facilitate interconnection of new clean energy resources.
- See United’s [summary briefing and whitepaper](#) it commissioned on Order 2023 and forward-looking interconnections reforms necessary in New England (wrote by Daymark Energy Advisors).

Thank you

Please reach out to Alex Lawton
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for any questions or feedback.



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