To: Alex Rost, Director, & Interconnection Service Team
Cc: CAR-SA Team; Jillian Macura, Secretary
From: Advanced Energy United
Date: 02/06/2025

Re: Objectives of Surplus Service Updates

Summary

Under the Transmission Committee's surplus interconnection service (SIS) investigation and CAR-SA project at ISO-NE and NEPOOL, Advanced Energy United (United) and its members are focused on two immediate objectives, as described in Section I of this memo. This encompasses how to (1) ensure a separate, fair, and faster process to bring capacity surplus resources online, and (2) provide those resources with fair access to and compensation from the capacity market. Speed to commercial operation and market participation are objectives that we feel can be tweaked and achieved with relative ease through modest changes to SIS and market participation rules.

These are important objectives because low-cost, expeditious interconnections will spur high completion rate development opportunities, enable full utilization of existing grid capacity, and foster new resource entry that bolsters resource adequacy and lowers wholesale power costs for consumers. United does not strictly see the need for any new constructs outside of SIS, rather our objective is to ensure that SIS functions as intended under FERC Order No. 845. This would allow for surplus project approvals for systems without network upgrades to be processed more quickly outside of the regional cluster process.

After Section I, this memo explores issues adjacent to SIS reforms, such as securing permanent interconnection rights and repowering (Section II), principles and guardrails to ensure SIS is designed fairly (Section III), and why we ought to implement SIS changes promptly and in coordination with CAR-SA (Section IV). We encourage CAR-SA team members to read Section I(2).

Summary of Overall Objectives

- **Speed to commercial operations**: Expeditious, fast-tracked interconnection service (e.g. faster than full cluster study) to facilitate faster new resource entry with the goal of supporting resource adequacy and keeping costs affordable.

- **Cost containment and improved certainty:** Surplus Interconnection Customers (SIC) that design systems in a manner that avoids triggering network upgrades benefit from greater

cost certainty and lower overall costs that will improve financeability and help with project completion rates, leading to more new resource entry.

- **Investment certainty/development opportunity**: easier to finance surplus projects if there is clarity on how a SIC will acquire/retain permanent interconnection rights when original resource retires.

- **Dynamic Market Participation/opportunity**: the surplus customer should be able to access capacity market revenues in addition to energy, and leverage economic efficiency by harnessing available capacity headroom at a point of interconnection (POI) dynamically based on latest accreditation values, such that if the original interconnection customer (OIC) is derated/offers less into auction, the SIC can increase its size/offer on an auction-by-auction basis.

- **Fair process**: A fair, open, and transparent process which fosters competition and maximizes the value of SIS opportunities for the region.

The current barriers that have prevented participants from using SIS to date stem primarily from difficulty participating in the capacity market, and the lack of permanent capacity interconnection rights (CIRs), creating risk that may make interested parties hesitate to proceed via the otherwise attractive SIS pathway. Finding solutions for these objectives would address these barriers.

I. Surplus Service and Market Participation

1. Surplus Capacity Interconnection Service

United believes a primary goal of surplus interconnection rule updates should be to extend the basic framework for surplus service to capacity resources. Critically, this means using an expedited process to bring surplus resources online in a manner aligned with current surplus rules. We seek a design aligned with the intent of FERC Order No. 845, which is premised on only allowing surplus resources to 'interconnect' and begin commercial operations expeditiously if they avoid network upgrades, with the parties sharing that capacity as they see fit. In other words, if a SIC application triggers network upgrades, then they should be subject to the interconnection cluster study and must seek interconnection through that process.

In every scenario except SIS under the current rules, adding a new technology type behind an existing POI would be deemed a material modification and would trigger a new interconnection request subject to a cluster study. However, SIS was intended to allow a participant to add a new technology behind the same POI as an existing resource without necessarily going through the cluster, so long as it does not trigger network upgrades. Even if a SIC respects the Capacity Network Resource Interconnection Service (CNRIS) injection limits at the POI that apply to the OIC,

it could trigger upgrades for other reasons. However, SIC developers will have a strong incentive to deliberately design and configure their surplus systems with the specific intent of avoiding network upgrades. This is in their benefit because not only will they have access to a faster interconnection process and speed to commercial operation, but also because there is less cost and risk. Network upgrades can often prove prohibitively expensive or even prematurely terminate projects and would at a minimum complicate financing the project if the risk of upgrades is unknown. If SICs successfully avoid network upgrades, it respects FERC's interconnection principle of 'first ready, first served,' limits chances of withdrawal, and raises completion rates.

ISO-NE and NEPOOL could resolve the misnomer of how a technology addition without network upgrades does not trigger a material modification by updating the definition of a Material Modification. Currently, a Material Modification is defined in the tariff as any change that would exceed 10 days' worth of study.[1] A SIC may be classified as a material modification under this definition, despite causing no network upgrades. This definition is conservative and might needlessly or inadvertently throw projects into a cluster when they do not actually trigger network upgrades. Another parallel tariff revision to consider is changing the language in Section 3.3, which renders SIS inapplicable "when a new interconnection request for interconnection service" would be required because of a material modification.[2] Under ER25-778, PJM adjusted their Material Modification language to address the same issues regarding SICs avoiding the cluster.

Another key question to explore during NEPOOL discussions is the timeline for surplus interconnection service. While it may still be time consuming to conduct interconnection study work outside of the cluster for SICs, it almost undoubtedly should take only a fraction of the time that a cluster cycle (and potential restudy) consumes. United believes it is critical to set a timeline even for the surplus interconnection process so that SIC developers have clarity on the maximum amount of time projects would undergo interconnection processes before reaching commercial operation. The surplus service study process could be conducted independent and parallel to ongoing cluster studies because if the SIC is approved and interconnects, there would be no network upgrades that would alter the cluster study base case. Surplus service requests could be significantly faster than the current 270-day cluster study timeline. FERC's Pro-Forma cluster study timeline of 150 days for instance would be a notable improvement relative to the timeline regular

[1] *Transmission, Markets and Services Tariff*, Section II (OATT), Schedule 22 (Large Generator Interconnection Procedures), ISO New England Inc., PDF p 17. Available at: https://www.iso-ne.com/static-assets/documents/regulatory/tariff/sect_2/sch22/sch_22_lgip.pdf
[2] *Id* PDF p 32.

interconnection customers undertake in the cluster, and a much faster timeline is likely feasible given MISO's 90 days and SPP 60 days reasonable efforts requirements.[3]

2. Market Participation & Accreditation

Market participation and accreditation updates will also be critical mechanisms for the successful use of surplus service. SICs must be afforded an opportunity to earn capacity market revenue that fairly reflects the contributions they offer to system reliability. Therefore, updating rules to govern how surplus resources "share" capacity with an OIC and how the SIC and OIC are accredited will be necessary.

Regardless of what options surplus resources have to participate in the capacity market, it will be important to recognize that a surplus resource must be subordinate to the OIC until they earn permanent interconnection rights (whether by going through a cluster study as a co-located resource, hybrid, or some other means). The subordination of the surplus resource is critical because the OIC should determine whether it wants to offer its full qualified capacity/MRIC into the auction, or share some of the capacity with the surplus resource. Subordination also means the SIC's interconnection rights are inherently temporary and subject to the preferences of the OIC. Participant OICs and SICs should have the freedom and discretion to configure their systems and market participation as they deem fit together. This may mean treating the two systems as one resource in a hybrid configuration, or as two separate entities under a co-located arrangement. In either case, the SIC remains subordinate.

We understand ISO is already considering the accreditation of hybrid and co-located resources as part of the Capacity Auction Reform-Seasonal Accreditation (CAR-SA) process. Hybrid and co-located resource accreditation methodologies could be extended to SICs and OICs to capture the complementarity and interactions between two different capacity resources which are treated as one resource in the market. Another approach could be to allow SICs and OICs to operate from a market participation standpoint closer to how co-located resources might participate, meaning they each have a Capacity Supply Obligation (CSO) and are independent entities. It is important to distinguish that co-located resources in the market participation and accreditation context is similar yet distinct from how we discuss co-located resources in the interconnection process.

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[3] *FERC Electric Tariff, Attachment X* (Generator Interconnection Procedures), § 3.3.1.2 (Evaluation Process for Surplus Interconnection Request), Midcontinent Independent System Operator, Inc., PDF p 90. Available at: https://cdn.misoenergy.org/20250307%20PAC%20Item%2002%20Attachment%20X%20%E2%80%93%20Generator%20Interconnection%20Procedures%20%28GIP%29_%28with%20JTIQ%20Compliance%29684429.pdf?utm_source=chatgpt.com; *Open Access Transmission Tariff,* Attachment V (Generator Interconnection Procedures), § 3.3.4.1 (Surplus Interconnection Service Impact Study), Southwest Power Pool, Inc., PDF p 14. Available at: https://spp.org/documents/70634/20231130_revisions%20to%20improve%20the%20process%20for%20initiating%20interconnection%20requests_er24-501-000.pdf

Without having details on how hybrid and co-located resources are defined and modeled under CAR-SA just yet, it is difficult to say what is the best fit. It will be important in any case to provide options for SICs to allow interconnection customers with different technologies and business models to take leverage SIS opportunities. It is not difficult to envision how these methodologies could inform how to accredit surplus resources and clarify how they participate in the market.

In instances where the OIC offers its full MRIC into each auction, there is likely to be capacity headroom behind the same POI for the surplus resource to leverage. This is because the physical capability of the POI, its CNRIS limit, is fixed, while the accredited capacity of resources is fluid. Once CAR-SA is implemented, there is a strong probability that many or most existing resources will receive a derating. An OIC with a CNRIS of 100 MW, and a QC or SCC of 100 MW today may only have 85 MW of MRIC in any given season under CAR-SA. For that particular auction, it would leave the surplus resource with up to a 15 MW CSO opportunity. These values may also differ seasonally. Furthermore, as accreditation values change over time, OICs and SICs capacity assignments and CSOs can change accordingly, where the SIC is subordinate to the OIC. The result is optimization of capacity behind that POI while the OIC operates more-or-less as it otherwise would, and a market opportunity for the SIC. This is the most efficient use of the grid's existing infrastructure.

While the accreditation and market participation aspects of surplus resources are better handled under CAR-SA, the definition of "unused capability" under surplus service rules needlessly limits market participation. If accreditation is fluid and we are to maximize capacity for SICs, it does not make sense to keep fixed the amount of energy or capacity a SIC can offer into the auction. We understand that the unused capability definition does just that, fixing a static capacity value which a OIC may concede to a SIC.[4] Changing the definition of unused capability to reflect the dynamic nature of capacity accreditation and make efficient use of grid infrastructure should be a relatively low and straightforward lift.

II. Issues Adjacent to Surplus Interconnection

There are a couple of surplus adjacent topics that may or may not be appropriate to address in the preliminary scope of adjusting SIS rules, which may be addressed more effectively through separate processes and tariff provisions. We outline them in these comments because they are critical to the overall success and utilization of SIS, and flow logically from it. These include rules governing (1) attaining permanent interconnection rights, whether as a co-located resource or in

[4] *Transmission, Markets and Services Tariff*, Section II (OATT), Schedule 22 (Large Generator Interconnection Procedures), ISO New England Inc., PDF p 23-24. Available at: https://www.iso-ne.com/static-assets/documents/regulatory/tariff/sect_2/sch22/sch_22_lgip.pdf

the event of a deactivation (when an SIC must obtain permanent interconnection); and (2) repowering and/or increasing the size of a SIC in the event an OIC deactivates.

1. Permanent Interconnection Rights

Most SICs will presumably seek permanent interconnection rights so that they have better certainty of prospective market revenues and the overall value of their assets. Surplus service offers an expedient pathway to the market and commercial operation, but currently hinders SICs from obtaining permanent interconnection rights independent from the OIC. Permanent, independent CIRs are crucial for reducing risk for developers and spurring participation in surplus service. If a SIC is required to go through a cluster study and potentially be responsible for network upgrade costs after it has already become operational, and if those upgrade costs are not supportable, this could lead to an unwanted market exit. This risk has deterred participants from using SIS to date and if unresolved, may prematurely terminate new market entrants' commercial operations or simply continue to deter prospective SICs from applying for SIS altogether.

If an SIC applies for *capacity* surplus interconnection service, has no network upgrades, and is approved, they ideally should be entitled to permanent CIRs and avoid entering the cluster cycle. This capacity surplus interconnection study can grant CIRs by examining charging if the SIC is a storage unit, as well as the full capacity injection capability of two scenarios: (1) a scenario where the OIC is injecting a large majority or all of the overall capacity and the SIC is injecting any remaining difference, so the sum of their auction offers/accredited capacity equals the CNRIS; and (2) a scenario where the SIC is injecting its full capacity injection capability. If the SIC passes these studies without triggering upgrades, there is no technical reason why the SIC cannot assume the full CIRs of the OIC if it deactivates. This is a critical design component for a successful SIS process. We welcome further discussion on how this approach may satisfy the intent of FERC Order No. 845 to prevent creating a shadow queue or granting some resources unduly preferential treatment.

2. Repowering

In other jurisdictions, such as PJM and MISO, there is a separate generator replacement process for transferring CIRs after an OIC retires. Upon an OIC deactivation in ISO-NE, should a SIC with CIRs want to step in to the shoes of the OIC to replace that generator and/or increase its size to utilize the additional capacity headroom, it seems that would currently be handled through repowering. United is open to ideas and discussion on how this can best be facilitated, whether repowering is the best process for that, and if so, what changes may be necessary.

On a conceptual level, a functional generator replacement process should facilitate a SIC simply stepping into the shoes of the OIC. This assumes the SIC is not making any changes to its system,

and therefore no additional study is necessary. Since the SIC already requested capacity SIS, those studies should have investigated how the resource would have behaved and performed independently from the OIC. Under this approach, SICs obtain permanent CIRs when they pass capacity SIS processes.

The least ideal approach would be mandating a cluster study for any SIC whose OIC retires without exception. If we regrettably cannot avoid this outcome, at a minimum, the SIC should be able to undertake the cluster process while continuing its commercial operations while it obtains permanent capacity interconnection rights (CIRs). An SIC may wish to do this irrespective of or in advance of an OIC deactivation, because without permanent interconnection rights, deactivations threaten the commercial operation of a SIC. The one-year grace period SICs have to obtain CIRs is not aligned with the new Order 2023 cluster cycle timeline, and therefore, a deactivation would have at least some adverse impact to a SIC who may wish to operate continuously by ceasing its operations. Therefore, a SIC may seek to anticipate a deactivation before notice is provided, enter the cluster, and secure its CIRs before the deactivation disrupts its market participation. Once a SIC secures its own CIRs, it may still be subordinate from a market participation standpoint to the OIC, but it no longer need be subordinate in an interconnection context. In practice, this interconnection equality means that if the OIC deactivates, the SIC would not need to go through another cluster study if all else stayed the same.

We understand that other jurisdictions work slightly differently, and would instead subject a SIC replacing a deactivating generator to a separate study process, not dissimilar to the initial SIS study process, outside of the cluster study. This is the second best outcome, a potential compromise, and is preferable to sending those projects through the cluster. The same principles would apply—a separate, faster study process where if any network upgrades are found and the SIC wishes to proceed, they must enter the next cluster cycle. Because the CNRIS of the site is already determined, unlike other areas of the system where cluster participants are contending for and speculating on available capacity headroom, SICs have already designed their systems accordingly to avoid the chance of network upgrades. This is less ideal however because the mere existence of this second generator replacement/repowering process creates a risk to developers and deters participation upfront in SIS because there is no guarantee that the SIC will obtain permanent CIRs even if it passes initial SIS studies and becomes commercially operable. A fair, predictable, and efficient process to attain CIRs is therefore critical to encouraging use of SIS in general.

III. Fairness Principles

FERC Order No. 845 forewarned of the need to prevent creating a shadow queue that would allow resources to cut the line, receive preferential treatment, and/or inappropriately bypass standard rules and processes. United strongly supports a fair, non-discriminatory, and open process for SICs to seek surplus service in a manner that does not disrupt the cluster and other ICs. That

means firstly, designing a surplus process that does not unfairly discriminate against certain technology types and disproportionately burden technologies (e.g. energy storage) when determining surplus eligibility. Secondly, a sound surplus design ought to tailor eligibility for surplus service to only projects which do not trigger network upgrades. This will ensure SICs do not step on the toes of other projects in the cluster by triggering network upgrades that would impact them.

Another principle should aim to encourage market participants to fully leverage surplus opportunities by improving both transparency on surplus interconnection potential and flexibility for non-incumbent SICs. In theory, incumbents with available capacity headroom, large derates under CAR-SA, and/or with plants reaching the end of their life cycle have the most to gain from a workable SIS process. The surplus potential and CIRs they hold should incentivize them to harness SIS opportunities for themselves, their subsidiaries, and affiliates, and/or to seek out third-parties to take advantage of their valuable surplus interconnection capacity. Discretionary, bilateral agreements between OICs and affiliates proposing a surplus resource may be most expedient and fair given the incumbent earned the CIRs. SIS can be further optimized with measures and design that are conducive to utilizing capacity headroom and ensuring fair and consistent treatment for SICs.

One way to facilitate this is to have ISO-NE periodically report out surplus capacity availability throughout the region to signal to market participants where and how much headroom there is across the system. Another constructive measure to make SIS more available to non-incumbents would be for ISO to develop and tender a standard Surplus Generator Interconnection Agreement (Surplus GIA). This pro forma Surplus GIA should govern the shared use of interconnection rights and be flexible enough to accommodate and respect the different approaches the SIC and OIC arrange to share capacity from both an interconnection and market participation standpoint. A *pro forma* Surplus GIA would also ensure agreements between OICs and SICs are fair and treat parties consistently, regardless of whether they are between an incumbent and a subsidiary or an incumbent and a new and separate entity.

IV. Surplus Service Work Plan and Timeline

It is critical and feasible to update surplus interconnection and market participation rules in 2026. Determining how SICs will be treated once they secure CIRs and/or once the OIC retires are important questions, but can wait to be addressed in a subsequent proceeding if necessary. We feel that tweaking the surplus rules to clarify its application to capacity resources, adjusting the definition of unused capability, and harmonizing and applying accreditation frameworks to the market participation rules for SICs are relatively simple, straightforward, and modest changes to make.

It's unclear exactly what the exact purpose and scope of the ISO's proposed gap analysis for surplus service entails. Perhaps it's as simple as collecting stakeholder feedback and ascertaining where current rules fall short of participants' objectives. If so, this gap analysis need not take as long as proposed, and instead, the time would be better spent on hammering out the design details of the changes at technical committees. Given the timeline for CAR-SA's completion and filing by the end of 2026, we have an excellent opportunity to make corresponding and complimentary changes to surplus rules at the Transmission Committee. We strongly urge the ISO to structure the surplus service stakeholder process, tariff revisions, and filing timeline to align with CAR-SA, complete it by the end of 2026, as well as contemplate SIC participation under CAR-SA.

Conclusion

United supports targeted tariff updates that extend SIS to capacity resources through a separate, faster process that remains available only where no network upgrades are required, consistent with FERC Order No. 845. In parallel, ISO-NE should harmonize surplus market participation with CAR-SA so accredited capacity can be shared efficiently behind an existing POI while the surplus resource remains subordinate until it secures permanent interconnection rights. Completing these reforms on a CAR-SA–aligned timeline in 2026 will unlock low-cost, expeditious entry, improve project completion rates, and make better use of existing grid infrastructure for consumers.