

Affected System Operator (ASO) Report to Potentially Affected Customers

This is Eversource's biweekly report to customers who have the potential to be included in a future Affected System Operator (ASO) study. In accordance with the MA DPU Orders D.P.U. 19-55-C, D.P.U. 19-55-D, and the issuance of the *DG Guidelines For Interconnection*, these reports will be issued on the first and fifteenth business day of each month. Eversource's Massachusetts service area in the Greater Boston, Upper Southeastern Massachusetts ("SEMA"), Cape, Springfield and Pittsfield regions have all had ASO studies conducted in the past and these regions will remain consistent for any future ASO study conducted.

New applications in western MA and Greater Boston areas that were eligible for Eversource's 2023 ASO study were reviewed for concurrence of study level determinations with ISO-New England and have been posted on Eversource's ASO website. The 2021 ASO study recently completed in the SEMA/Cape areas with the 2023 ASO study in progress in Western MA and Greater Boston.

Eversource continues to explore, to the greatest extent possible, the ability for projects to have Level 0 studies. Currently there are 72 applications across these regions that have been identified as needing a potential ASO study with 35 in western MA and 37 in eastern MA. This total is a combination of new applications that have been submitted and applications that have opted out of a prior ASO study that still require one be completed.

These reports along with general ASO information can be found on the ASO Website:
<https://www.eversource.com/content/ema-c/about/about-us/doing-business-with-us/builders-contractors/interconnections/massachusetts/affected-system-operator-studies>

Please direct questions related to the ASO to your respective Account Executive so that they can be circulated to the appropriate party for response, and if applicable, added to the ASO Website's FAQ section for others to review.

1. What additional information is needed to determine if an ASO study is necessary?

Eversource needs to complete any ASO studies underway in a region prior to assigning new projects in queue a transmission study level and starting a new round of studies. At the start of each new study round, Eversource issues initial ASO Study notifications to potential customers impacted requiring their project be reviewed for study level agreement by ISO-NE for either a Level 0 or a Level 3 ASO study. After there is concurrence on study level for each project between Eversource and ISO-NE, individual projects will be notified of their study level by their Account Executive through Powerclerk and posted on the ASO website.

The SEMA/Cape Level 0 study received verbal approval at the May 2022 RC meeting and PPA letters have been circulated to customers. Eversource began the SEMA/Cape Level 3 study as of June 2022. Eversource presented 14 of the Level 3 projects at the September RC meeting and received verbal approval.

Eversource has completed the additional sensitivity, stability, and PSCAD analyses for the remaining 13 Cape projects. Eversource presented these 13 projects at the November RC meeting and received PPA approval. Once PPA letters are received, Eversource will distribute to customers via Powerclerk. This reflects full completion of the 2021 SEMA/Cape ASO study.

Eversource has commenced the 2023 ASO Study in Western MA and Greater Boston. The Western MA and Greater Boston 2023 opt in/opt out period ended on February 24, 2023. All Level 0 projects received PPA approval at the May and June RC meetings. Eversource has circulated the PPA letters to customers via Powerclerk. Eversource held a customer update call on May 24, 2023 to share the Level 0 results and kickoff the Level 3 studies.

Eversource has finalized the Western MA and Greater Boston Level 3 study assumptions and base cases with ISO-NE. Steady state analyses are complete in both Greater Boston and Western MA. For Western MA projects, the short circuit analysis is complete with the stability analysis near completion. Both analyses are actively progressing and underway for Greater Boston projects.

Factors could impact these preliminary study level determinations, such as queue attrition and project size changes. If a project is initially assigned a Level 0 study, it is possible that during the Level 0 study process, that some projects may be identified as requiring further Level 3 studies and those projects (if any) will add to the final scope of the Level 3 study conducted.

2. When will the EDC know whether an ASO study is required?

Eversource is proceeding with a next round of ASO studies in the Western MA and Greater Boston areas (for applications deemed complete through 1/31/23). The previous round of studies for the SEMA and Cape areas (for applications deemed complete through 10/1/21) is currently underway. Eversource has received concurrence on study levels from ISO-NE for these projects.

For projects that have been submitted in these areas after the cutoff dates, the ASO Impact Screens will continue occurring for these newer projects and at the earliest opportunity the projects will be invited to opt in to a future ASO study. Results of the ASO Impact Screens are posted on Eversource's ASO website under Initial Study Level Determinations. Eversource has added the process diagram for ASO

Impact Screens, that it worked to develop with the other MA Electric Distribution Companies (EDCs), to its ASO website as an additional customer reference.

3. What are the potential impacts on interconnection timelines and costs?

At this time for planning purposes, Eversource anticipates 2023 Level 0 studies to cost \$7,500 for Level 0 No Study projects and \$15,000 for Level 0 Transfer Limit Analysis (TLA) projects. Level 0 projects typically take around 4 months from study commencement. Level 0 No Study projects still require PPA approvals and PSCAD models to be provided by customers.

For each study round, Level 3 studies will begin once Level 0 studies are complete so that the applicable transmission and distribution upgrades are known and can be modeled in a Level 3 study. The Level 3 study per ISO-NE PP5-3¹ typically takes up to 12 months, depending on complexity and scope. ASO study costs will be a flat fee based on study level for Level 0 (No Study and TLA) and Level 3.

The costs for the 2023 studies have been confirmed with the impacted Level 3 customers on a project-by-project basis. The range of the 2023 Level 3 study costs are from \$30,000 to \$60,000 across EMA and WMA.

4. Are there any proposed resolutions that the EDC is exploring to enable some affected DG applicants to proceed with the interconnection process prior to completion of the ASO study?

Eversource is continuing to proceed with distribution-level studies, including distribution Group Studies authorized by D.P.U. 17-164, while ASO transmission-level studies are being conducted. This approach is being utilized to reduce the distribution-level study wait time and increase value to customers.

5. How does the EDC plan to address the situation and minimize delays to interconnection timelines of potentially affected DG applicants?

There are distribution study efficiencies that Eversource has implemented to minimize study timelines for highly congested areas warranting the formation of a Group Study. With distribution Group Studies, there will also be an associated group solution to support cost sharing potential amongst customers. For any future transmission studies, Eversource will be able to utilize load models and DER models aggregated by bus that have been set up for the ASO underway and anticipates the ramp up time for any future ASO study to be shorter, as some preparation work has already been completed.

Eversource has also created technical guidance documentation for customers to utilize to proactively gather modeling data needed for an ASO study; this documentation is available on the ASO website. It is strongly recommended that customers use this documentation to work with their inverter manufacturers and other technical stakeholders early in the process (once an ASO study level is known)

¹ https://www.iso-ne.com/static-assets/documents/rules_proceeds/isone_plan/pp05_3/pp5_3_final.pdf

to obtain the necessary comprehensive and accurate technical files, all customers will see a benefit to schedule improvement and study commencement. As discussed in these biweekly reports, all projects regardless of ASO study level, will require PSCAD models for the study.