

Affected System Operator (ASO) Report to Potentially Affected Customers

May 1, 2024

Updates are Noted in Red

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 2023 ASO study is 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.

Eversource's current data as of this report reflects the following as projects that have been identified as needing a potential ASO study:

- Total applications across Massachusetts:
 - Western MA:
 - In Level 3 Study Currently – 18 Projects
 - Future ASO – 39 Projects
 - Eastern MA:
 - In Level 3 Study – Greater Boston – 4 Projects
 - In Level 3 Study – SEMA/Cape - 15 Projects
 - Future ASO - 26 Projects

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.

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.

The current status of each active ASO study is reflected below.

SEMA/Cape:

The 2024 SEMA/Cape ASO study is being performed to complete before August 1, 2024 and get PPA approval at October RC meeting.

- Custom Kickoff Call occurred Tuesday February 6, 2024
- Opt In / Out Window closed February 15, 2024
- Payments in Transit from Developers
- Customer Modeling Fixes are due March 29, 2024
- Eversource reviewing PSCAD Models
- Model Acceptance/Rejection to Level 3 Customers April 5, 2024
- Eversource sent the first request to ISO-NE for a list of FERC Queue Projects (QPs) models that are required to be modeled in the ASO study base cases in Feb 2024. Since then Eversource has been working with ISO-NE to get the steady state, short circuit, stability and PSCAD models
- PSCAD Study Case Building has begun

Western MA:

- Opt In / Out Period Ended 2/24/2023 - Complete
- Level 0 – Completed May/June 2023
- Verbal Approval at May / June 2023 RC Meeting – PPA Letters have been circulated to Customers.
- Level 3:
- Customer Kickoff Call occurred 5/24/2023
- Eversource has finalized the Level 3 study assumptions and base cases with ISO-NE.
- Steady state analysis is complete and no adverse impact was identified.
- Short circuit analysis is complete and no adverse impact was identified.
- Stability analysis without one FERC QP model is complete and preliminary review of results by ISO-NE is completed. Potential sensitivity analysis may be required once the FERC QP stability model is available.
- PSCAD Study Case Building has begun.
- Additional QPs were requested to be included in the WMA ASO study. As a result, the completion date for the 2023 WMA ASO study is currently undetermined, and we anticipate needing an additional 2 months to finish once we receive the models. Our current goal is to finish the studies before August 2024.
- ISO-NE has provided models for the additional two FERC QP's on 3/20 and Eversource is performing the study with the additional FERC QP's included in the study cases.
- PSCAD Case Building has been completed and analysis has begun.

Greater Boston:

- Opt In / Out Period Ended 2/24/2023 - Complete
- Level 0:
- Verbal Approval at May, June and October 2023 RC Meetings – PPA Letters have been circulated to Customers.
- Level 3:
- Customer Kickoff Call occurred 5/24/2023
- Eversource has finalized the Level 3 study assumptions and base cases with ISO-NE.
- Steady state analysis is complete and no adverse impact was identified.
- Short circuit analysis is complete pending result review by ISO-NE.
- Stability analysis is in progress.
- PSCAD Case Building has begun.
- Additional QPs were requested to be included in the GB ASO study. As a result, the completion date for the 2023 GB ASO study is currently undetermined, and we anticipate needing an additional 2 months to finish once we receive the models. Our current goal is to finish the studies before August 2024.
- PSCAD Case Building has been completed and analysis has begun.

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). Eversource has received concurrence on study levels from ISO-NE for these projects.

Eversource is proceeding with a next round of ASO studies in the SEMA/Cape areas (for applications deemed complete through 2/5/22). 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?

Level 0 No Study:

- \$7,500 Cost
- Require PPA approvals and PSCAD models to be provided by customers.

Level 0 Transfer Limit Analysis (TLA):

- \$15,000 Cost
- Typically take around 4 months from study commencement.
- Require PPA approvals and PSCAD models to be provided by customers.

Level 3 Study:

- \$60,000 Cost
- Commences once Level 0 studies are complete
- Study Timeframe typically takes up to 12 months, depending on complexity and scope

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) 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.