

Affected System Operator (ASO) Report to Potentially Affected Customers

July 15, 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
 - Transitional Study ASO – 44 Projects
- Eastern MA:
 - In Level 3 Study – Greater Boston – 4 Projects
 - In Level 3 Study – SEMA/Cape - 15 Projects
 - Transitional Study ASO – 25 Projects
 - SEMA/Cape - 19 Projects
 - Greater Boston – 6 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.

Notes for the In Process ASO studies:

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
- Steady State Analysis:
 - Eversource has the pre-project steady state cases and study scope ready, submitted to ISO-NE for review on May 24, 2024
 - Added a sensitivity steady state case to take into account the co-located PV+BESS projects.
 - Modeled the proposed projects in the steady state cases.
 - Received ISO-NE's comments on the steady state scope on 6/14, steady state cases need to be updated.
 - Received ISO-NE's additional comments on the generation dispatch of steady state scope on 6/25
 - submitted the updated steady state scope to ISO-NE for review on June 28th .
 - Running the steady state analysis with the proposed project
- Stability Analysis
 - Modeled the equivalent impedances at each substation.
 - Received ISO-NE's comments on the stability scope on 6/14, stability cases need to be updated.
 - Will submit the updated steady state scope to ISO-NE for review on July 1st.
- Electromagnetic Transient (EMT) PSCAD Analysis
 - Submitted ISO-NE the PSCAD study scope for review on 5/24
 - Received ISO-NE's comments on the PSCAD scope on 6/14, fault list need to be updated.
 - Will submit the updated steady state scope to ISO-NE for review on July 1st.
 - submitted the updated stability scope to ISO-NE for review on June 28th.
 - Running the stability analysis with the proposed projects.
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- Short Circuit Analysis
 - Eversource submitted ISO-NE the short circuit study scope on 5/24. No ISO-NE's comments on the short circuit scope on 6/14
 - No ISO-NE's comments on the short circuit scope on 6/14. Eversource is preparing the short circuit case with proposed projects.

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 is targeting to get PPA approval for the 2023 WMA ASO study in the August RC meeting.
- Steady State Analysis
 - The sensitivity analysis has been completed and there was no adverse impact found.
- Stability Analysis
 - The sensitivity analysis has been completed and there was no adverse impact found.
- Electromagnetic Transient (EMT) PSCAD Analysis
 - PSCAD Case Building has been completed and analysis has begun.
 - WMA PSCAD Analysis is expected to complete by June 30th.
 - PSSE-PSCAD Benchmarking is in progress
 - PSCAD faults are being run.

- Short Circuit Analysis
 - Eversource has received the additional QP models from ISO-NE on March 20 and is commencing a sensitivity analysis to examine the incremental impact of the additional queue projects on the WMA ASO Study Cluster.

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
- PSCAD Case Building has been completed and analysis has begun.
 - PSSE-PSCAD benchmarking is in progress
 - PSCAD faults are being updated and rerun to better align with PSSE results
- Eversource is targeting to get PPA approval for the 2023 WMA ASO study in the August RC meeting.
- **Steady State Analysis**
 - **The sensitivity analysis has been completed and there was no adverse impact found.**
 - **Report and results are under ISO-NE review**
- Stability Analysis
 - The sensitivity analysis has been completed and there was no adverse impact found.
 - **Report and results are under ISO-NE review**
- Electromagnetic Transient (EMT) PSCAD Analysis
 - PSCAD Case Building has been completed and analysis has begun.
 - WMA PSCAD Analysis is expected to complete by June 30th.
 - Report and results are being finalized.
 - **Report and results are under ISO-NE review**
- Short Circuit Analysis
 - GB Short Circuit Analysis has been completed and results will be shared with ISO-NE
 - **Report and results are under ISO-NE review**

Notes for the Transitional ASO studies:

SEMA/Cape:

- 7/11/24 - Custom Kickoff Call occurred – 19 Projects
- 7/11/24 - Opt In / Out Notifications Issued – Due 7/18/24

Western MA:

- 7/11/24 - Custom Kickoff Call occurred – 44 Projects
- 7/11/24 - Opt In / Out Notifications Issued – Due 7/18/24

Greater Boston:

- 7/11/24 - Custom Kickoff Call occurred – 6 Projects
- 7/11/24 - Opt In / Out Notifications Issued – Due 7/18/24

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

2. 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.

3. 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.