Eversource 2021 ASO Study Customer Kickoff Meeting

Southeast Massachusetts & Cape Areas

December 3, 2021

Agenda

- Introductions
- Study types and definitions
- Study level determination
- Overview of ASO areas
- Level 3 technical data
- Process and next steps
- Q&A

ASO Overview – Study Types

- Level 0 - No Studies
  - Collection and validation of PSCAD models for each project will be required for all projects.
- Level 0 - Transfer Limit Analysis
  - Conduct transfer limit assessment to ensure no degradation of ISO-NE Interface Limits. If adverse impacts found, a Level 3 study will be required.
  - Level 0 screenings need to be completed before Level 3 studies start
  - Some Level 0 may require more detailed Level 3 studies, pending findings in Level 0 analysis
  - Collection and validation of PSCAD models for each project will be required for all projects
- Level 3 studies
  - Conduct thermal and voltage steady state, short circuit, stability analysis
  - Electromagnetic Transient Study using PSCAD will be required
  - Detailed technical data will be requested from projects and is required to start studies

ASO Overview – Study Types (continued)

- Project Sizes
  - > 1 MW and < 5 MW = Level 0 - No Study for substation or group of substations less than 5 MW
  - > 1 MW and < 5 MW = Level 0 - Transfer Limit Analysis for substation or group of substations less than 20 MW
  - > 1 MW and < 5 MW = Level 3 ASO Study for substation with 20 MW
  - ≥ 5 MW = Level 3 ASO Study
  - ≤ 1 MW = No ASO analysis/study (provided not co-located)

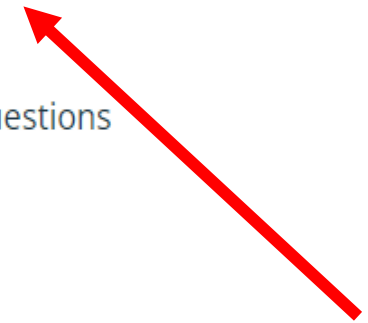
Notes: Distribution studies/progress is separate from content in this presentation

Study Level Spreadsheet

- Eversource‘s ASO Website

2021 ASO

- Eversource Proposed Study Level Determinations & ISO-NE Comments and Study Level Determinations - Greater Boston Area | Western Mass Area | SEMA and Cape Areas
- Frequently Asked Questions - This updated FAQ includes answers to questions asked during the ASO Stakeholder meetings.
- Technical Data Request List for ASO Transmission Studies
- Inverter/Design Changes & Customer Required Action – describes the customer-required follow ups for design changes based on the study phase the project is currently in



SEMA and Cape study level determinations

ASO Overview – SEMA and Cape

Station Capacity (MW)	Level 0 Transfer Limit Analysis	Level 3 Transmission Study	Grand Total
B-Upper SEMA	**9**	**131**	**140**
Arsene St 654		2	2
Assonet 647		5	5
Brook St 727		2	2
Canton 470		5	5
Cross Road 651		4	4
Crystal Spring 646		17	17
Duxbury 738		8	8
Fisher Road 657		3	3
Industrial Park 636		26	26
Marshfield 739		5	5
Tremont 713		23	23
Walpole 146	9		9
West Pond 737		11	11
Wing Lane 624		20	20
C-Cape		**66**	**66**
Falmouth 933		4	4
Harwich 968		3	3
Hatchville 936		24	24
Hyannis 961		5	5
Orleans 975		10	10
Sandwich 916		5	5
Valley 715		6	6
Wareham 714		5	5
Wellfleet 976		4	4
Grand Total	**9**	**197**	**206**

Applications (#)	Level 0 Transfer Limit Analysis	Level 3 Transmission Study	Grand Total
B-Upper SEMA	**3**	**42**	**45**
Arsene St 654		1	1
Assonet 647		1	1
Brook St 727		1	1
Canton 470		1	1
Cross Road 651		2	2
Crystal Spring 646		5	5
Duxbury 738		4	4
Fisher Road 657		1	1
Industrial Park 636		6	6
Marshfield 739		1	1
Tremont 713		6	6
Walpole 146	3		3
West Pond 737		5	5
Wing Lane 624		8	8
C-Cape		**16**	**16**
Falmouth 933		1	1
Harwich 968		1	1
Hatchville 936		7	7
Hyannis 961		1	1
Orleans 975		2	2
Sandwich 916		1	1
Valley 715		1	1
Wareham 714		1	1
Wellfleet 976		1	1
Grand Total	**3**	**58**	**61**

23 substations impacted

Total of 206 MW DERs

Level 0 – Transfer Limit Analysis

- 9 MW
- 3 applications

Level 3 – Transmission Study

- 197 MW
- 58 applications

Technical Data Required

- Data required to support Level 0 PPA approval
  - Fully functioning PSCAD model that meets the PSCAD model requirements
  - Inverter model information (e.g., BESS description if applicable, frequency and voltage relay trip settings)
  - Stamped one-line diagram including inverters
  - Project market information (e.g., In-service date, whether in ISO-NE market per OP-14 generator definition)
- Data required for Level 3 study (**in addition to all of above**)
  - Detailed project technical data including the collector system and step-up transformer information.
  - Project specific stability model in PSS/E standard library format (for projects >=5MW).
- **Please read and follow the Technical Data Request Requirements.**

EVERSOURCE MODEL AND TECHNICAL DATA REQUEST LIST FOR AFFECTED SYSTEM OPERATOR (ASO) TRANSMISSION STUDIES

Process and Next Steps

Target Dates	Milestone
12/6 – 12/17	Customers respond to PowerClerk account creation email request
Week of 12/20	PowerClerk email to customers requesting: 1. To opt in or out of the study 2. Make payment 3. Upload modeling files into the portal This requires action within 10 Business Days (BDs) upon receipt.
10 BDs after receipt of email (January)	Customers opt in/out, provide payment and upload technical data
10 BDs after submittal (January)	**Cure Period for Technical Data** timeframe to get project's modeling rectified and update any missed requirements
End of Cure Period (February)	**Working Model Deadline** customer data models must be fully functioning, otherwise project will not be able to participate in this ASO study
March 2022	Eversource holds kickoff meeting with ISO-NE
March 2022	Level 0 studies commence 1. Level 0 No Study Needed, 1-2 months duration 2. Level 0 Transfer Limit Analysis, 3-4 months duration
June – July 2022	Level 3 studies commence

Next Steps

- Review technical data requirements sheet on the ASO website for modeling requirements, in preparation for uploading
- Look for an email from PowerClerk requesting you create an account
- After all accounts are created, PowerClerk will send another email requesting that you opt in or out of the study, make payment and submit data with 10 business days upon receipt
  - No response will indicate an “opt out”
- Stay up to date with study schedule via biweekly reports, monthly reports and ad-hoc updates

OPEN Q&A