Eversource 2021 ASO Customer Update Meeting

Southeast Massachusetts (SEMA) and Cape Area

June 23, 2022

Outline

- ASO Schedule Review and Project Update
- Study Area and Project Overview
- Level 0 ASO Study Results
- Level 3 ASO Study Update
- Level 3 Study Objectives
- Next Steps

ASO Schedule Review

Date	Milestone	Actual Completion Date
January 2021	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.	On-time: Customers responded within 10 days
10 BDs after receipt of email (February)	Customers opt in/out, provide payment and upload technical data	On-time: Customers responded within 10 days
10 BDs after submittal (March)	<u>Cure Period for Technical Data</u> timeframe to get project's modeling rectified and update any missed requirements	On time: Modeling validation is an iterative process between Eversource and customers.
End of Cure Period (March 2022)	<u>Working Model Deadline</u> customer data models must be fully functioning, otherwise project will not be able to participate in this ASO study	
Mar 2022	Eversource holds kickoff meeting with ISO-NE	
April 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	Ahead of Schedule – Completion date of May 2021
June 2022	Level 3 studies commence	June 2022

Study Areas and Project Overview

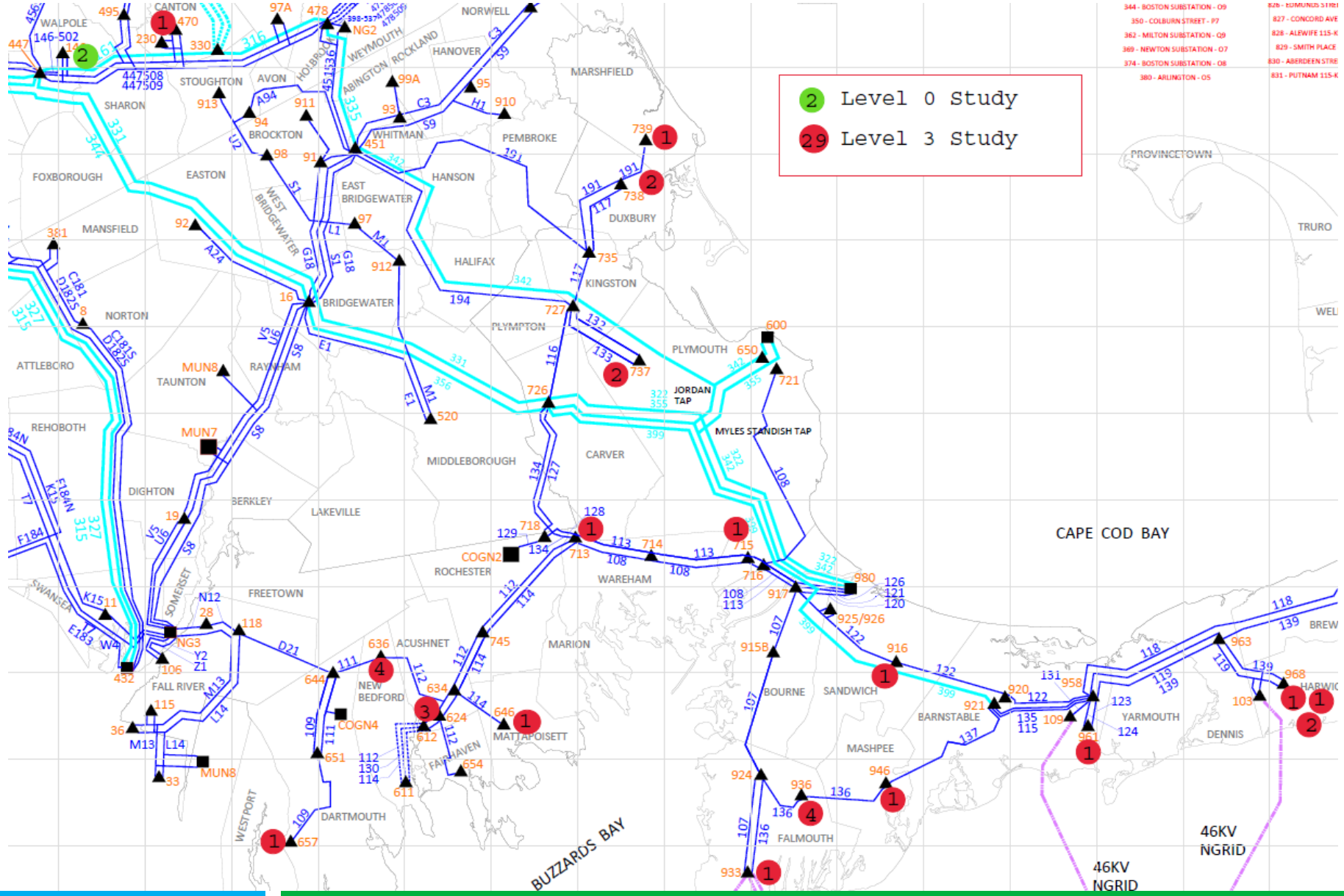
Level 0 and Level 3 Projects in SEMA/Cape ASO Study Queue

Station Capacity (MW)	Level 0 - No Study	Level 0 - Transfer Limit Analysis	Level 3 - Transmission Study	Grand Total (MW)
Upper SEMA	0	4	65	69
Canton 470			5	5
Crystal Spring 646			2	2
Duxbury 738			7	7
Fisher Road 657			3	3
Industrial Park 636			17	17
Marshfield 739			5	5
Tremont 713			5	5
Walpole 146		4		4
West Pond 737			7	7
Wing Lane 624			15	15
Cape	0	0	55	55
Falmouth 933			4	4
Harwich 968			4	4
Hatchville 936			18	18
Hyannis 961			5	5
Mashpee 946			1	1
Orleans 975			10	10
Sandwich 916			5	5
Valley 715			4	4
Wellfleet 976			4	4
Grand Total	0	4	119	123

Number of Application	Level 0 - No Study	Level 0 - Transfer Limit Analysis	Level 3 - Transmission Study	Grand Total
Upper SEMA	0	2	16	18
Canton 470			1	1
Crystal Spring 646			1	1
Duxbury 738			2	2
Fisher Road 657			1	1
Industrial Park 636			4	4
Marshfield 739			1	1
Tremont 713			1	1
Walpole 146		2		2
West Pond 737			2	2
Wing Lane 624			3	3
Cape	0	0	13	13
Falmouth 933			1	1
Harwich 968			1	1
Hatchville 936			4	4
Hyannis 961			1	1
Mashpee 946			1	1
Orleans 975			2	2
Sandwich 916			1	1
Valley 715			1	1
Wellfleet 976			1	1
Grand Total	0	2	29	31

- 19 substations impacted
  - 123 MW
  - 31 applications
- Level 0 No study/TLA
  - 4 MW
  - 2 applications
- Level 3 studies
  - 119 MW
  - 29 applications

ES DER Projects In ASO Study Queue – SEMA/Cape

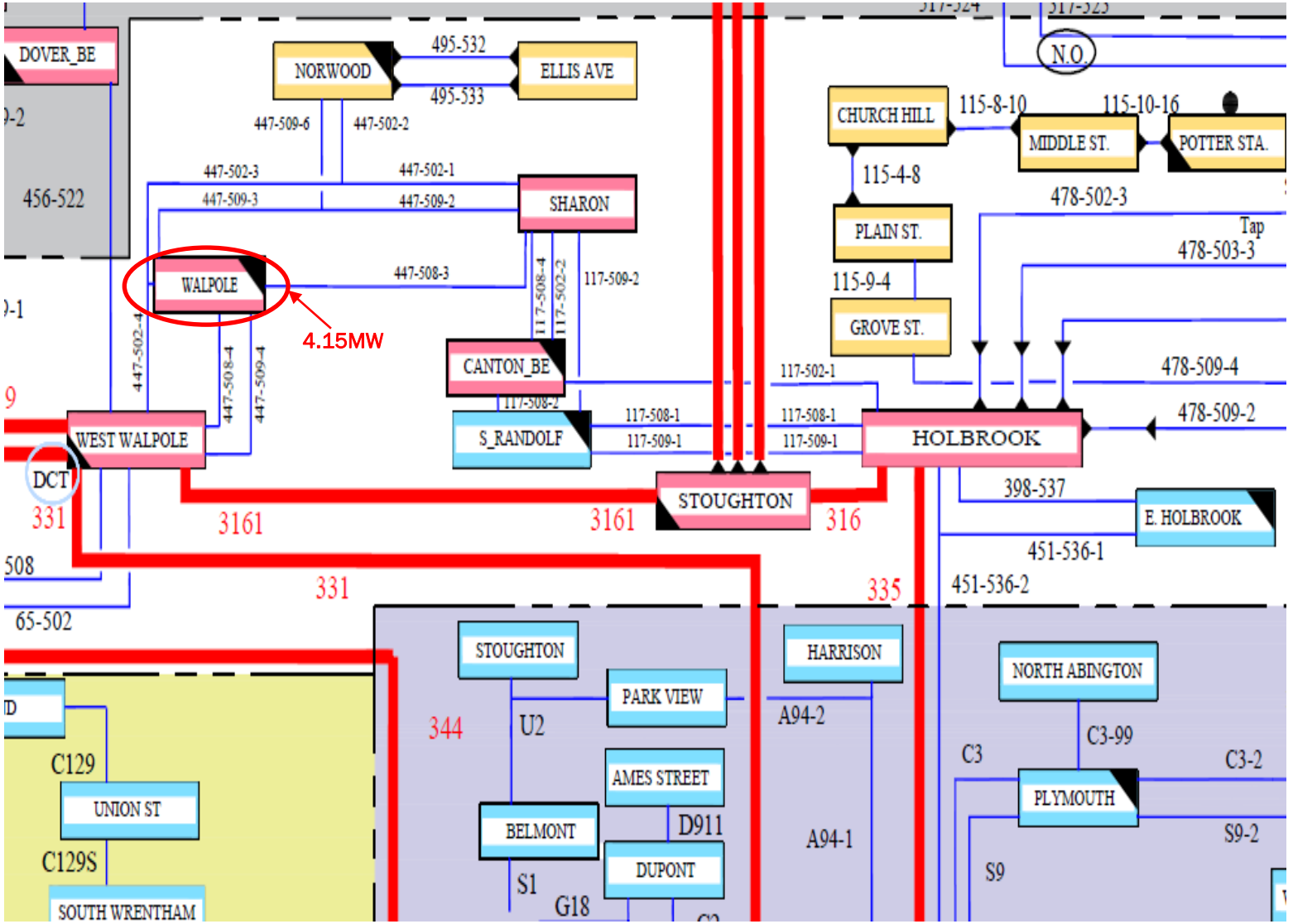


Level 0 ASO Study Results

Level 0 Analysis Update

- 2 projects totaling of 4.15 MW at Walpole
- Level 0 screening findings/results:
  - Post project flow on a transmission line in the two project Area compared to pre project flow is less than 1%.
  - The proposed two Level 0 projects do not have any significant adverse impacts on the ISO-NE transmission system

- Conclusion:
  - Proposed Plan Applications (PPA) submitted to ISO-NE and approved at the May 17, 2022, Reliability Committee (RC) meeting
  - Affected customers were notified on June 16, 2022



Level 3 ASO Study

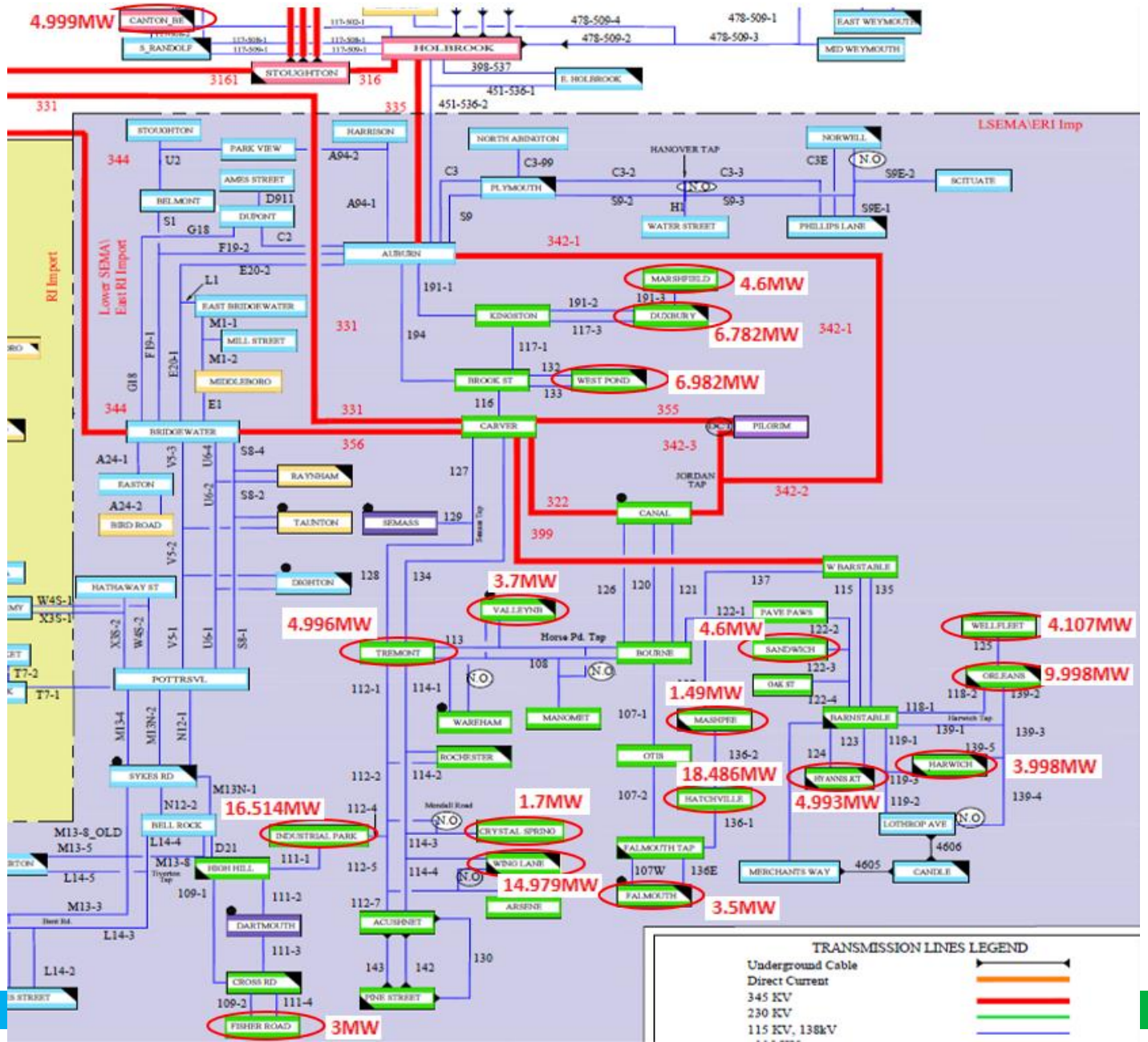
Level 3 DER Applications Aggregated by Substation in SEMA/Cape

- 29 projects totaling of 119.424 MW
  - 16 projects totaling 64.552 MW at Upper SEMA area
  - 13 projects totaling 54.872 MW at Cape area

- All level 3 projects received Non-FERC Queue Position from ISO-NE on June 9, 2022
- PSCAD model validation for all projects has been completed on May 10, 2022

ISO-NE Non-FERC Queue Position	Substation	Number of Applications	Total MW
Upper SEMA		16	64.552
1273	Canton 470	1	4.999
1274	Crystal Spring 646	1	1.700
1275	Duxbury 738	2	6.782
1277	Fisher Road 657	1	3.000
1281	Industrial Park 636	4	16.514
1282	Marshfield 739	1	4.600
1286	Tremont 713	1	4.996
1289	West Pond 737	2	6.982
1290	Wing Lane 624	3	14.979
Cape		13	54.872
1276	Falmouth 933	1	3.500
1278	Harwich 968	1	3.998
1279	Hatchville 936	4	18.486
1280	Hyannis 961	1	4.993
1283	Mashpee 946	1	1.490
1284	Orleans 975	2	9.998
1285	Sandwich 916	1	4.600
1287	Valley 715	1	3.700
1288	Wellfleet 976	1	4.107
Grand Total		29	119.424

Location of Projects in Level 3 ASO in SEMA/Cape



Level 3 ASO Study Objective

- Steady-state analysis to assess thermal overloads and voltage limit violations resulting from the DER interconnections,
- Stability analysis to verify acceptable model performance and, to identify any violations of stability acceptability criteria following system disturbances resulting from the interconnection,
- Short-circuit analyses to assess if circuit breaker short-circuit capability limits are exceeded as a result of the interconnection;
- PSCAD evaluation to verify acceptable control stability and interactions between inverter-based technologies connected to Distribution and Transmission, and acceptable DER ride-through capabilities;
- Determine any upgrades that are required to eliminate any thermal or voltage violation, system dynamic and transient stability and, degradation to transfer capability.

Next Steps

- Working with ISO-NE to develop Level 3 ASO study scopes
- Level 3 study schedule to be developed after Level 3 ASO Study Scope approval by ISO-NE
- Provide updates on preliminary study results after completion of the steady state and stability analyses

QUESTIONS?