



Interconnection Maps User Guide

Points of Interconnection (POI) Analysis Heatmap Overview

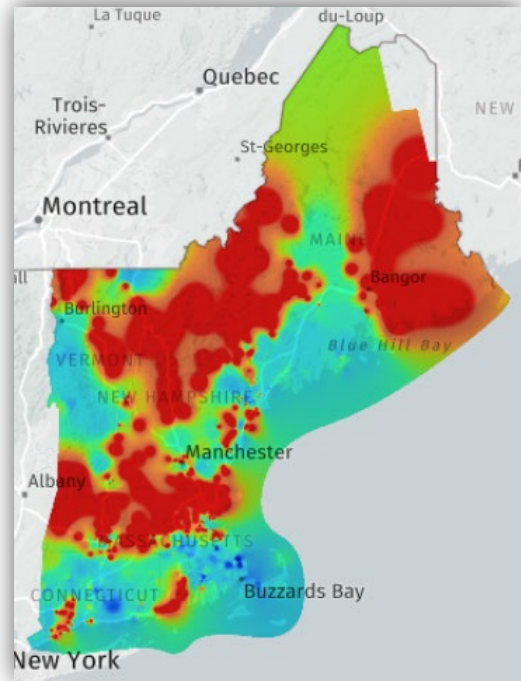
The POI analysis heatmap provides general insight into the ability of the New England system to support new capacity injections. Specifically, it provides an estimated indication of the amount of capacity that can be added at a POI (*i.e.*, estimated available incremental injection capacity) before an overload requiring mitigation (*e.g.*, an upgrade) is seen.

The POI analysis heatmap is supported by a DC power flow screen performed consistent with the Capacity Capability Interconnection Standard (CCIS). This screen is not a formal detailed CCIS analysis. Rather, this screen performs a CCIS-like load flow analysis for each POI to determine estimated available incremental injection capability for a selected **Cluster** and **Scenario**. The result of this power flow screen is what the user sees initially when the heatmap is opened, before the user adds MWs at a particular POI. The shading on this initial heatmap is reflective of the estimated injection capability across the various POIs in the ISO-NE administered system; and the user can hover over a specific POI to see the estimated incremental injection capability at that POI.

Users can select a POI and add a specified amount of MWs to it (up to 1,200 MW) to examine the potential impacts of the MW injection. The POI analysis heatmap uses distribution factors (DFAXs) for each element, as calculated from the CCIS-like power flow screen discussed above, to estimate and illustrate the impacts of the user-specified POI MW injection on relevant transmission elements. Specifically, the heatmap is updated to show a region estimating the extent of the user-specified POI MW injection's impacts. Tabular results are also provided at the bottom of the screen showing the estimated impacts of the injection on various transmission elements. Additional details for interpreting these results are discussed below in the "Notes on Interpreting the Results" section below.

Getting Oriented

- The initial heatmap view (*i.e.*, before the addition of a user specified MW injection at a selected POI) shows estimated available incremental injection capacity for the selected **Cluster** and **Scenario**, where blue/green regions indicate more available incremental injection capacity at a POI when compared to orange/red regions.



- The heatmap and POIs displayed correspond to the **kV level** selections in the **Display options** panel.
 - “<=69” will display results for any POIs rated at 69 kV and below
 - “69-115” will display result for any POIs rated above 69 kV up to 115 kV
 - “115-230” will display result for any POIs rated above 115 kV up to 230 kV
 - “345” will display result for any POIs rated above 230 kV up to 345 kV

Display options

Points of Interconnection ☒

kV Level

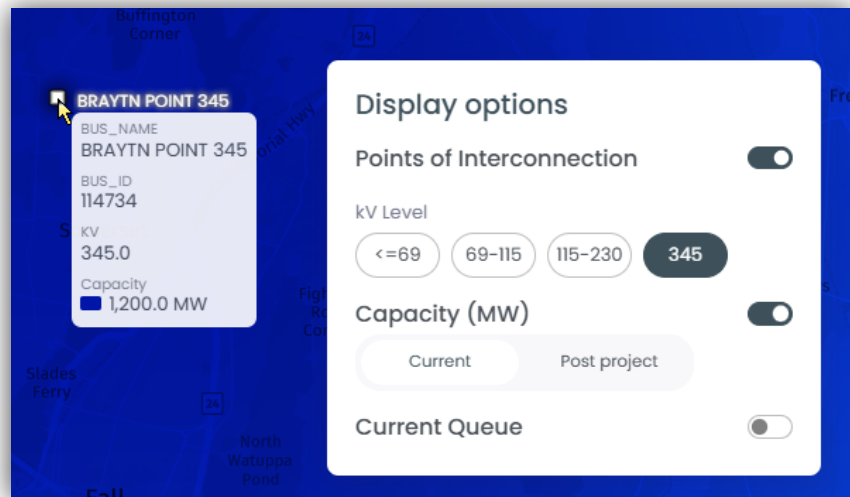
☒ <=69 ☐ 69-115 ☐ 115-230 ☐ 345

- Capacity Heatmap (MW)
-
- 1,200
1,100
1,000
750
500
250
125
100
75
50
40
30
5
No Capacity

-
- North Clarendon
- Pierces Corner
- Wallingford
- COLD RIVER 115**
- BUS_NAME
COLD RIVER 115
- BUS_ID
107710
- KV
115.0
- Capacity
262.0 MW

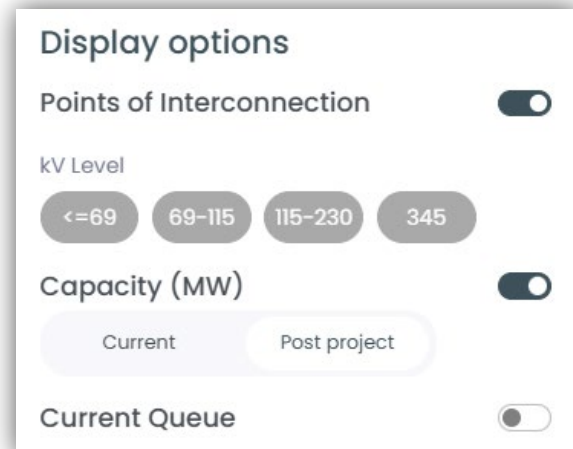
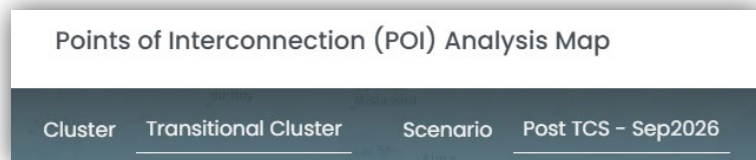
-
- EN_83 115
- Buffington
Corner
- BRAYTN POINT 115
- BRAYTN POINT 345
- BUS_NAME
BRAYTN POINT 345
- BUS_ID
114734
- Capacity
1,106.0 MW
- ANSEA 115
- GRAND ARMY 115
- Slades

- Users will need to filter for the desired **kV level** option to view the **Capacity MW** amount for a given POI and voltage level at that location.



Configure the View

- Select the **Cluster** and **Scenario** to display through the top bar.
- Configure what the map displays through the following options in the **Display options** panel (right panel):
 - **Points of Interconnection:** Show/hide white square POI markers. Note that white square POI markets only display when this option is selected, and when the heatmap view is sufficiently zoomed in.
 - **kV Level:** Select one or more kV levels (e.g., 115-230). The map and POI list filter accordingly.
 - **Capacity (MW):** After the user specification of MWs at a selected POI, toggle **Current** vs **Post project** to compare the base state (*i.e.*, the Cluster and Scenario system state) with and without the user specified injection at a selected POI applied:

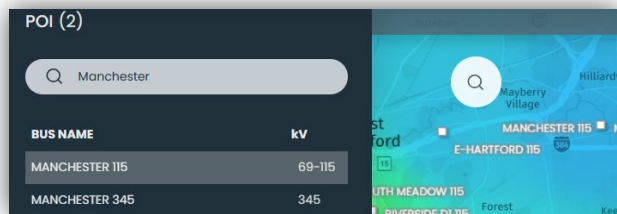


- **Current:** Displays the heatmap of estimated available incremental injection capacity for the selected Cluster and Scenario assuming no new injections into the system. The heatmap is generated using the minimum MW Available value at each POI across all constraints.
- **Post Project:** Adds a bounded region to the heatmap and changes shades within the boundary to display the geographic reach of constraints impacted by the incremental injection capacity.
- **Current Queue:** Show/hide all active Interconnection Requests (IRs) from the map. The contributions from all active IRs remain reflected in the map shading and results tables, even if a user selects to hide these IRs from the map.

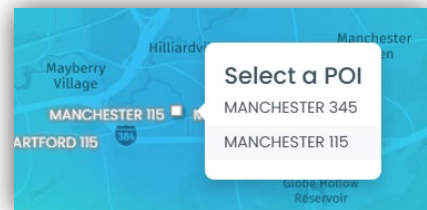
Choose a POI for a Potential MW Injection and Run an Analysis

- Specify and examine MW injection at a POI through the following steps:

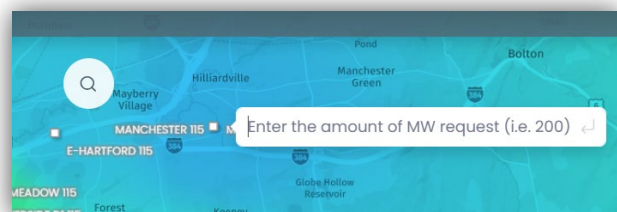
1. Zoom in until POIs (white squares) appear.
2. Select a POI on the map or from the **POI** list (left panel). Use the search field to find a POI by name or bus id.



3. If multiple POIs at different voltage levels exist at that location, select the POI for the desired voltage level from the **Select a POI** pop-up.



4. In the analysis prompt, **Enter the Amount of MW Requested** (e.g., 200) and press Enter. The POI Analysis map and table will show results for that incremental capacity injection.



Notes on Interpreting the Results

- What users see in the map: Upon completion of step 4 above, a bounded region with modified shading will appear on the map. The bounded region shows any constraint where the injection at the POI has a sufficient impact (i.e., a DFAX of 3% with respect to

the applicable Load Zone). Changes to the shading within this region reflect the reach of these constraints; they do not reflect the estimated available incremental injection capacity at any related POIs, or the magnitude of an overload on an element.

- What users see in the table showing the results: The table lists constraints where the injection at the POI has a sufficient impact (*i.e.*, a DFAX of 3% with respect to the applicable Load Zone). Rows with red text indicate the amount of MW requested at the selected POI is greater than the available incremental injection capability at the Selected POI (*i.e.*, an estimated overload occurs due to the injection of the amount of MW requested at the selected POI). The following options in the top-right corner of the table allow the user to:

- **Expand the Analysis:** view the full table, scroll to see all rows/columns, and filter by any column
- **Clear the analysis:** clear the current analysis and start over
- **Copy to clipboard:** copy the table results in tabular text format
- **Download as Excel:** export the results in an Excel (.xlsx) compatible format



Tips & Notes for Heatmap

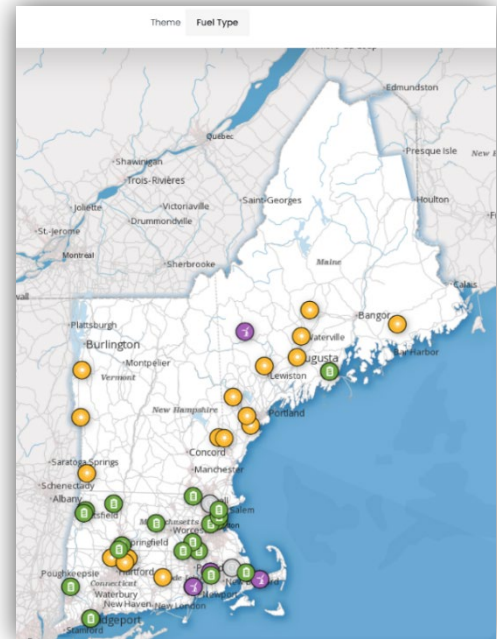
1. The POI list shows only POIs visible in the current map window and filtered by kV selections. If a POI is not visible on the map, zoom in further and enable **Points of Interconnection** in the **Display options**.
2. Results are determined based on the cases used for the specific **Cluster** and **Scenario**.
3. The presented results are not cumulative, even if MW injections at multiple POIs are tested. The impacted transmission elements for each individual POI's injection MW are appended to the **POI Analysis** table.
4. The results only indicate incremental capacity injection capability to approximate Capacity Network Resource Interconnection Service (CNRIS) or Capacity Network Import Interconnection Service (CNIIS), and do not reflect specific scope, magnitude of costs or construction time for expected interconnection related upgrades.
5. The **POI Analysis** table may list interfaces that indicate a potential flow exceeding their transfer limits due to a MW injection entered for a selected POI. These interfaces and any possible related shading are not displayed on the map.
6. There are no phase-shifting transformer adjustments considered for the post POI MW injection calculations.
7. After entering a MW injection at a POI, the **% Loading (Before)** value shown in the **POI Analysis** table is capped at 0% for transmission elements where their initial power flow was in the reverse direction before the applied MW injection at the POI. In this case, the difference between **% Loading (Before)** and **% Loading (After)** is not equal to the **% Impact** since a portion of the impact is absorbed by the change in the direction of power flow. For all other impacted transmission elements, the difference between **% Loading (Before)** and **% Loading (After)** is equal to the **% Impact**, within rounding.

8. When selecting a POI within a potential export-constrained intra-zonal area of the system, the impact on the associated interface(s) may not reflect the actual capacity export margin. This is because internal constraints could limit transfers before all capacity resources in the area are dispatched such that any related interface limits are reached.
9. Potential constraints on the sub-transmission (*i.e.*, below 69 kV) system are not included in the analysis results.
10. All analyses in the heatmap are limited to a maximum 1,200 MW injection at a POI.

Queue Map Overview

The Queue map shows active Interconnection Requests (IR) that are not yet commercial.

- The IRs can be displayed by different **Themes**, including Fuel Type, Interconnection Service, or MW amount.



- A panel at the top right describes the data displayed for the current **Theme**.
- The **Projects** list on the left shows all IRs included in the map.

Fuel Type : This map depicts the generator interconnection queue according to the type of fuel used.

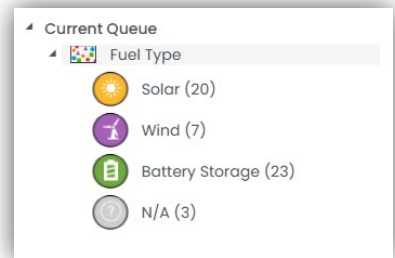
Each proposed point of interconnection (POI) on the map is indicated with an icon representing its fuel type, such as Solar PV, Batteries, Wind, etc.

Projects (53)

Search

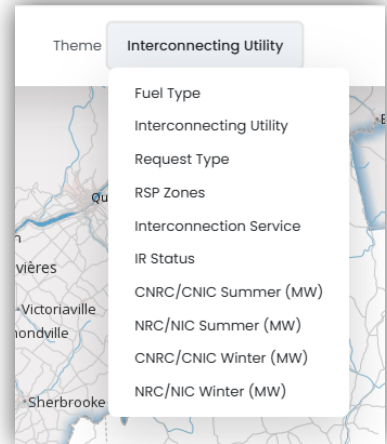
QP	Commercial Operation Date
674	2029-01-01
680	2028-07-01

- The **Current Queue** legend at the lower right indicates the categories for the current **Theme**.



Configure the View

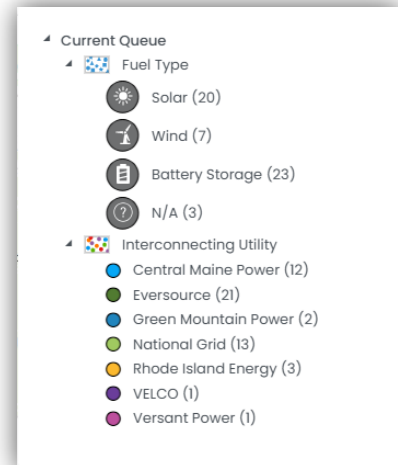
- At the center of the top bar, a **Theme** can be selected.



- In **Projects** (left panel):
 - Select a Queue Project (**QP**) from the list. Use the search field to find a specific **QP** in the list. Each **QP** is listed with its corresponding **Commercial Operation Date**.
 - Clicking on a **QP** zooms in on its location on the map.



- In the **Current Queue** legend (lower right panel):
 - Icons, colors, and symbols for each category of the current view are displayed.
 - Fuel Type icons will always be shown and additional categories appear depending on the **Theme** selected.
 - Hovering over or clicking a category will highlight all IRs that meet those criteria.



Tips & Notes for Queue Map

1. MW values are the requested interconnection MW amounts.
2. Information is reflective of what was in the ISO-NE interconnection queue at the time the Queue Map was last updated (which is indicated in the upper left corner of the top bar). OASIS may reflect more up-to-date information.

Questions may be submitted to [Participant Support and Solutions](#)