

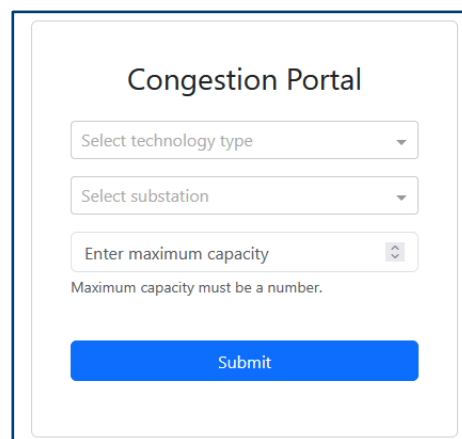
AESO Congestion Portal User Guide

Portal Overview

The AESO Congestion Portal is an online interactive tool that provides congestion information to stakeholders and offers a visual, geographic guide to assist market participants in making informed decisions about the size and location of their connection project. For any questions regarding the use of the portal, please contact customer.connections@aeso.ca.

Landing Page

After clicking the portal link on the AESO website, users will first be prompted to review and accept the terms of use for the congestion portal. After agreeing to these terms, users will be redirected to the portal landing page. On the landing page, users are required to provide three input parameters for a potential project connection: the technology type, the substation where the project will connect, and the maximum capacity of the project in MW. Users should first select the technology type and the substation from the dropdown menus. Next, enter the maximum capacity as a numeric value within a range of 5 MW to 466 MW. Non-numeric entries or values outside this range are not accepted. If any field is left blank or contains invalid data, the user will not be able to proceed. Once all fields are completed correctly, click **Submit** and allow a few moments for the results to be generated.

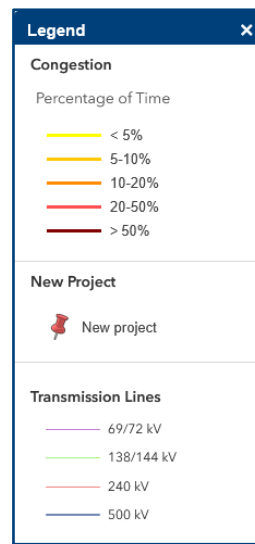
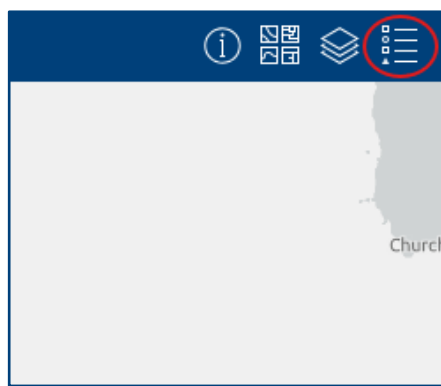


The screenshot shows a web form titled "Congestion Portal". It contains three input fields: a dropdown menu for "Select technology type", a dropdown menu for "Select substation", and a text input field for "Enter maximum capacity". Below the text input field, there is a small error message: "Maximum capacity must be a number." At the bottom of the form is a blue "Submit" button.

Map Widgets

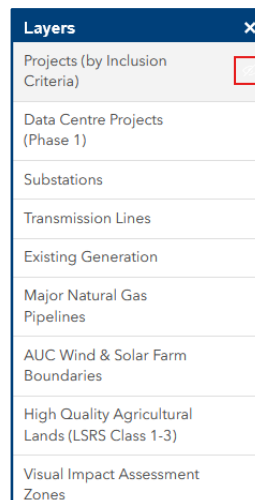
Legend

The map Legend panel is located on the right-hand side of the page and is open by default when the application first loads. Use the Legend toggle button in the top-right corner of the page to open or close the panel as needed. The legend will display all layers that are visible within the map.



Layers

The map Layers panel is located on the left-hand side of the page and is open by default when the application first loads. Use the Layers toggle button in the top-right corner of the page to open or close the panel as needed. To display or hide layers, click on the eye icon to the right of each layer. The eye icon appears when the cursor is hovering over a layer. For more information about individual layers within the map, please see the Layers section of this guide below.



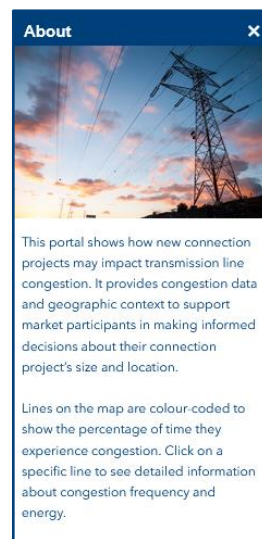
Basemap Gallery

The Basemap Gallery tool can be accessed using the Basemap Gallery toggle button located in the top-right corner of the page, and allows the user to change the background of the map. A wide array of Basemaps are available, including detailed satellite imagery. Different basemaps will focus more heavily on different features within the map. Users can choose the basemap that best suits their purpose.



Portal Information

The About panel can be accessed using the About toggle button located in the top-right corner of the page. It provides general information about the portal, including links to the methodology and assumptions documents, an FAQ, and this user guide.



Navigation

Navigate within the map by clicking and dragging across the screen. Zoom in/out using the mouse wheel or the +/- buttons in the top-left corner of the page. The Home button will return the map extent to the default extent.

Search Bar

Geographic locations, substations, and transmission lines can be searched in the search bar. Substations can be searched by either name or facility code. The drop-down on the left side of the search bar allows you to specify which layers to search.



Measure Tool

The Measure Distance and Measure Area buttons located at the bottom of the page enable geographic measurements of distance and area within the map. The Clear Measurement button can be used to clear the measurements.

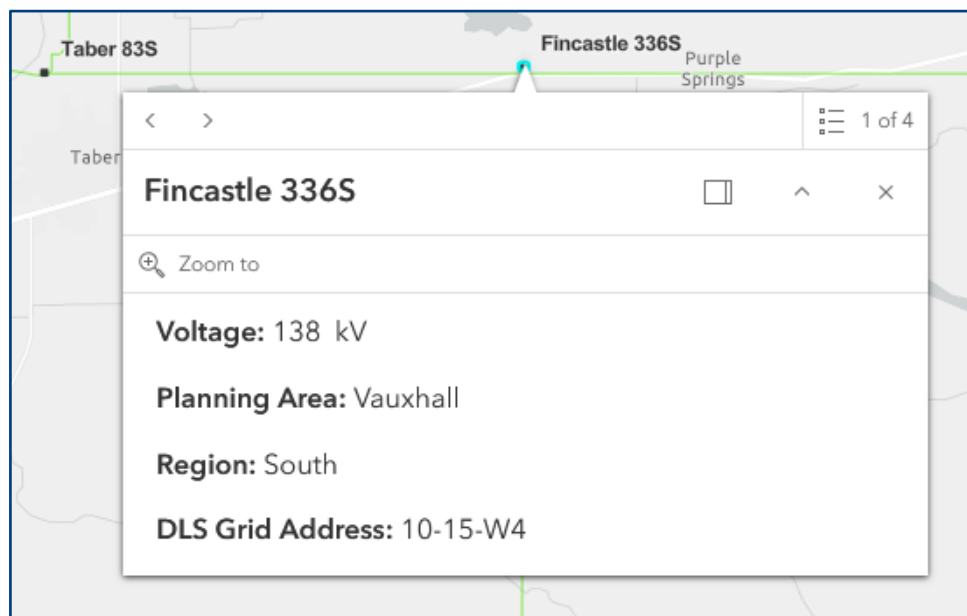


Click on the map to begin the measurement and to add subsequent points to the area polygon or distance line. Double-click to complete the measurement. A typical use for this tool would be measuring the distance from a potential project location to a substation or line.



Pop-up Window

When a feature is selected on the map, a pop-up window automatically opens to display its attributes. The selected feature is highlighted in light blue, indicating the selection.

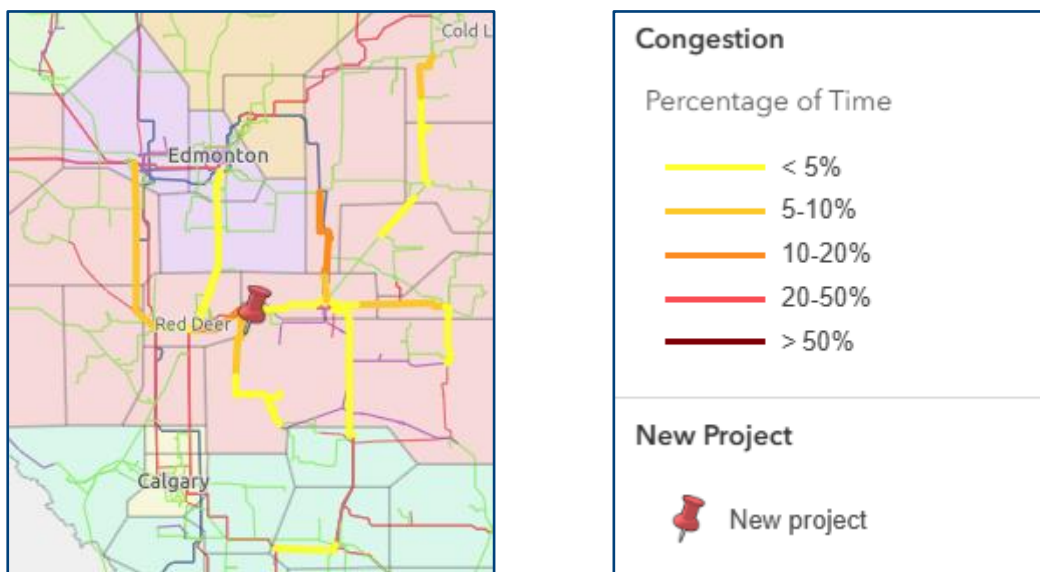


Map Layers

The map for the Congestion Portal includes a number of layers that provide geographic context for a potential project location. These layers can be toggled on and off by the user as desired.

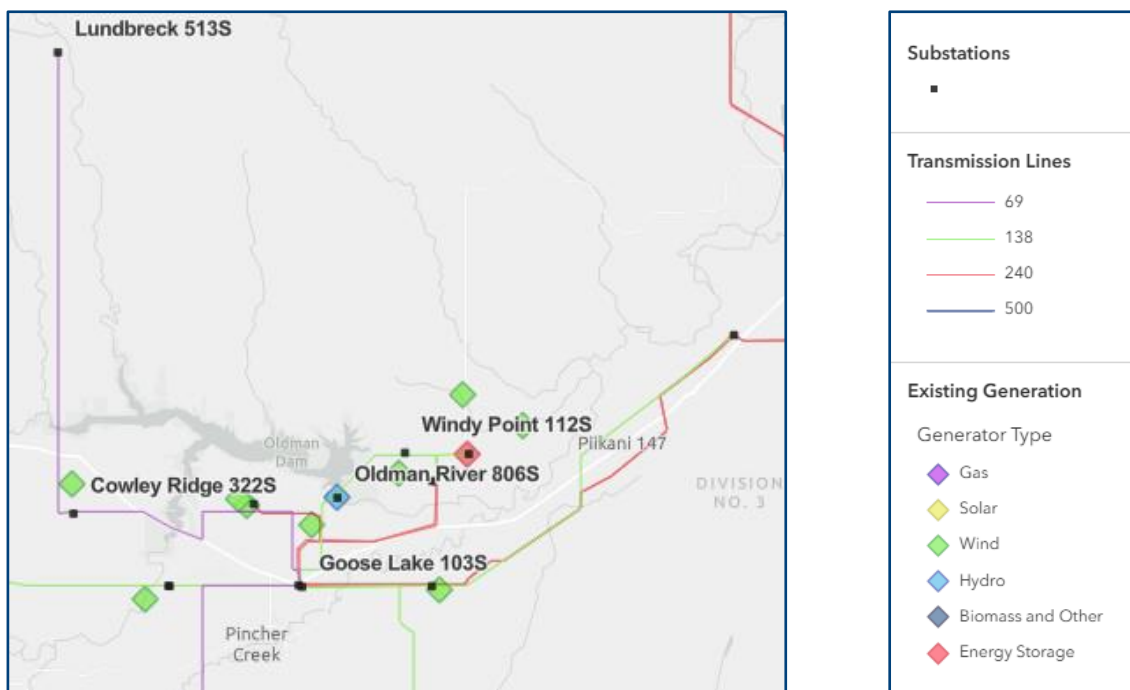
Congestion Layer

Lines on the map are colour-coded to show the percentage of time they experience congestion. Click on a specific line to view detailed information about congestion frequency and congested energy. The red pushpin indicates the geographic location of the user-defined project.



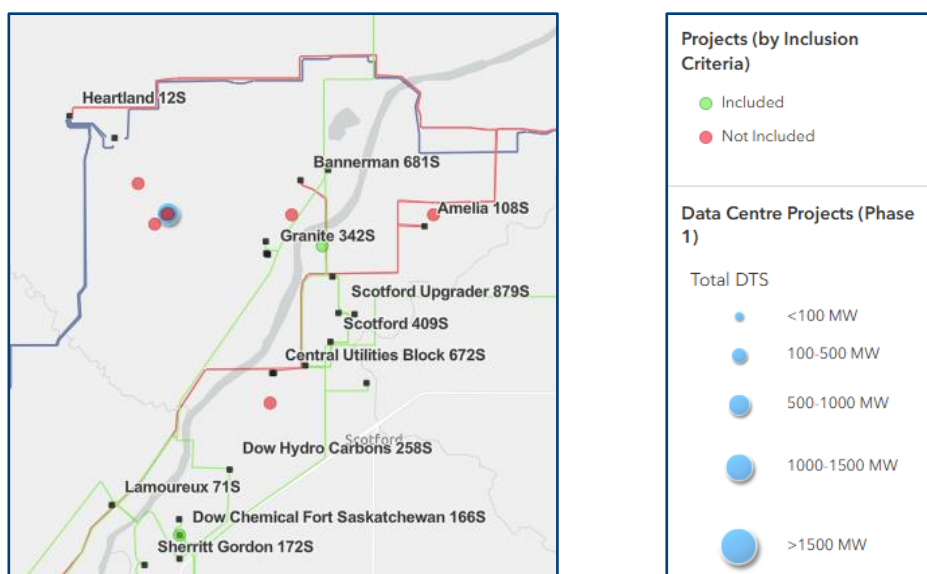
Transmission Facilities Layers

Layers showing transmission facilities are included to show system connectivity. Transmission Lines are colour-coded by voltage level. Substations are shown as a single point. Existing Generators are colour-coded by fuel type. Click on these layers to view detailed attribute information about individual features.



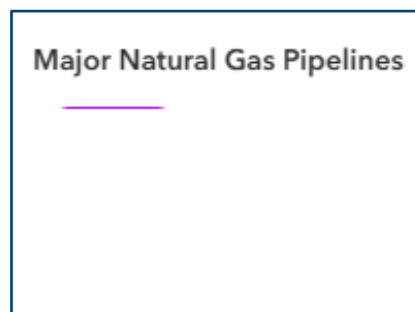
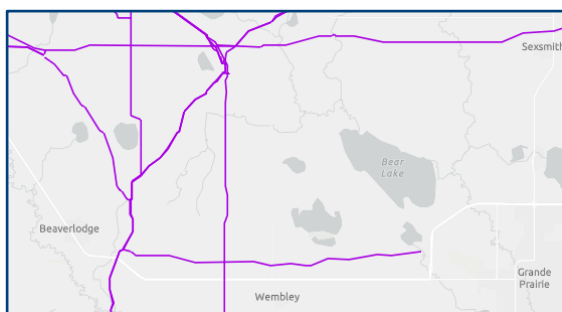
Projects Layers

Layers showing connection projects illustrate existing project interest in areas across the province. Projects are taken from the AESO Connection Project List and are updated quarterly. Projects are shown by inclusion status – those with an inclusion of Yes have been factored into the congestion results shown. A separate layer shows data centre projects from Phase 1 of the AESO’s Large Load Integration, with the size of the bubble indicative of the project size. Click on individual projects to see detailed attribute information.



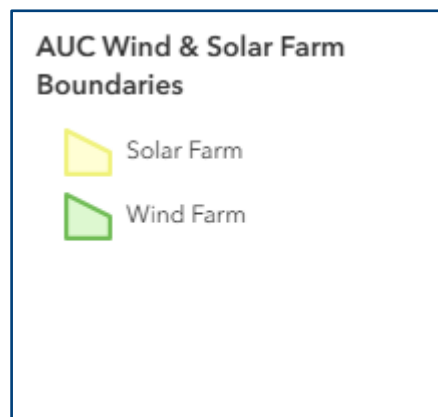
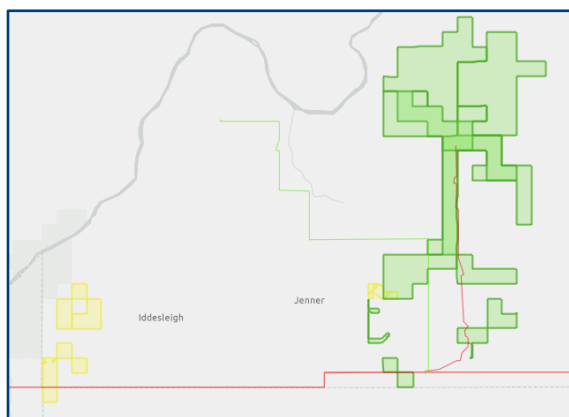
Natural Gas Pipelines Layer

Natural gas pipelines from the NGTL, Alliance, and Foothills pipeline systems provide additional context for potential gas projects. Data is from the Alberta Energy Regulator (AER) and represents the best information available to the AER at the time of publication. Click on pipelines to view detailed attributes for each feature.



AUC Wind and Solar Boundaries Layer

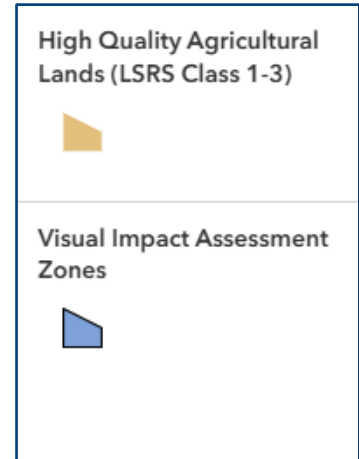
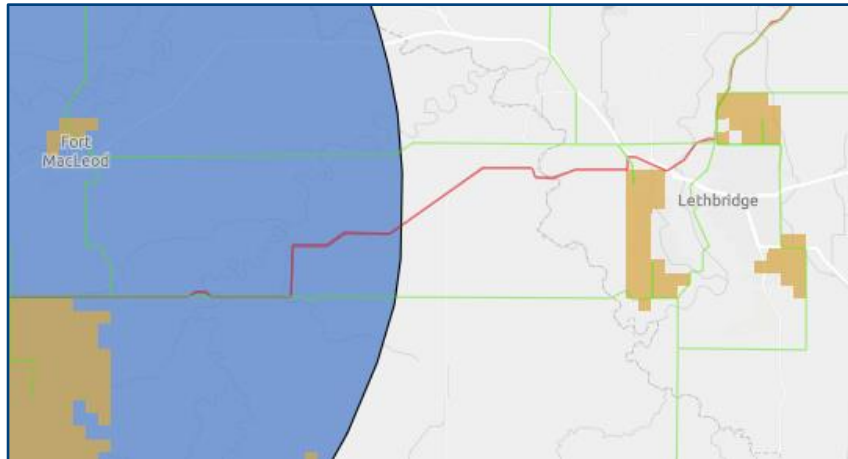
Layer from the Alberta Utilities Commission (AUC) showing project boundaries for wind and solar generation projects. This data includes power plants that are in operation, have been approved by the AUC, or have applied to the AUC for approval.



High Value Agricultural Lands and Visual Impact Assessment Zone Layers

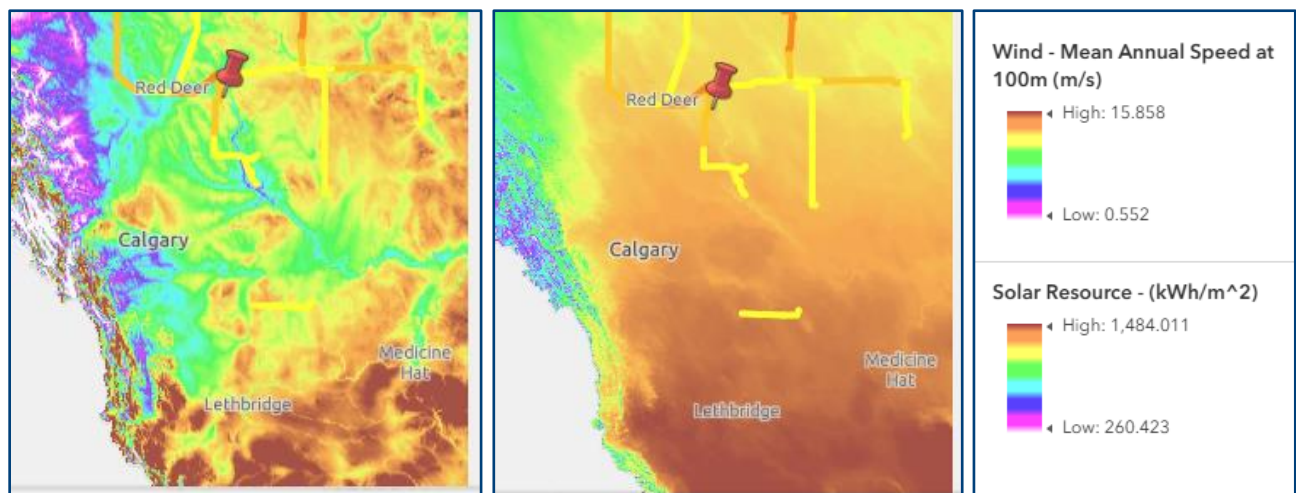
This layer includes features related to the [Electric Energy Land Use and Visual Assessment Regulation](#) enacted by the Government of Alberta in December 2024. The agricultural lands layer shows Land Suitability Rating System (LSRS) Class 1 and 2 lands and Class 3 lands in municipalities without Class 1 or 2 lands in Alberta. The Visual Impact Zones layer shows viewscape areas as

defined in the regulation. Either of these features could present additional regulatory risk for projects in those areas.



Wind and Solar Resource Layers

Layers are provided showing wind and solar resource data province-wide. Cool-to-hot colour maps illustrate resource levels, with “hotter” areas having a resource in greater abundance. Wind resources are shown by mean annual speed at 100m elevation, in meters per second. Solar resources are shown by irradiance, in kilowatt-hours per square meter.



Boundaries Layers

The default boundaries layer shown when the map loads displays AESO Planning Areas and Planning Region boundaries. Layers are also included for First Nations and Métis lands, Municipal Districts in the province of Alberta, and Transmission Facility Operator (TFO) service territories. These layers provide geographic context for potential developers regarding government or industry groups that may need to be engaged as part of the project process.

