



MAPPING WEB APPLICATION USER GUIDE



WELCOME

Welcome to the Global Energy Infrastructure Mapping User Guide.

Choose a topic from the right to find answers, get step-by-step instructions, and make the most from the application.

Global Energy Infrastructure Mapping (GEI Mapping) is a comprehensive, ESRI-based GIS platform, which visualizes energy data from the upstream, midstream and downstream sectors of the international oil and gas industry. GEI Mapping forms the geospatial element of Global Energy Infrastructure.

Developed by Gulf Energy Information, GEI Mapping draws on the data and experience of the industry's leading trade magazines and journals – Hydrocarbon Processing, H2Tech, Petroleum Economist, Hydrogen Economist, Carbon Economist, Pipeline & Gas Journal and World Oil – to give users the data they need to run their business.

The application has multiple mapping functions, widgets and filters which are all explained in this user guide

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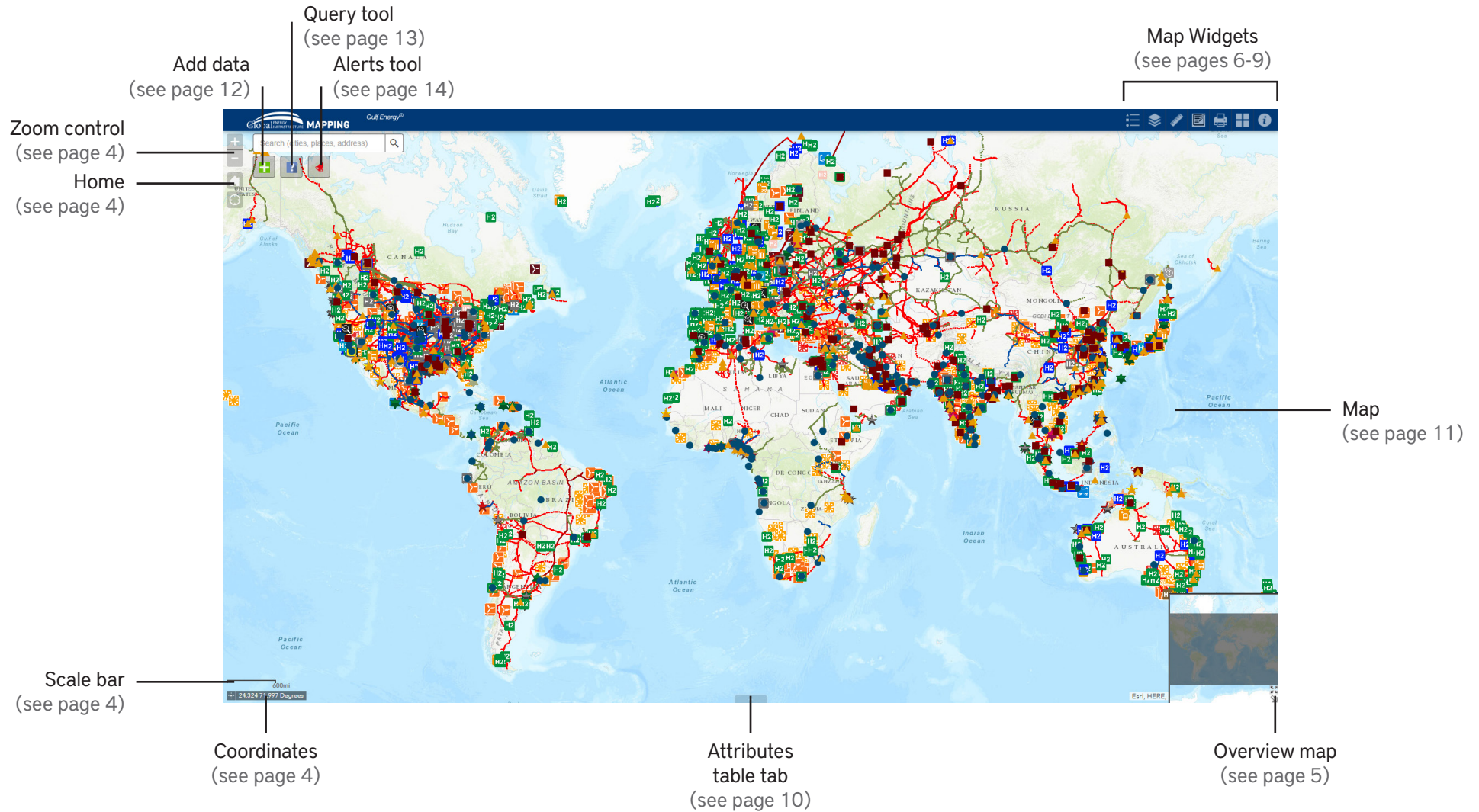
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APPLICATION INTERFACE

Below is the general interface of the application



MAP CONTROLS



Zoom control

To zoom in and out of the map you can click the plus (+) button to zoom in or click the minus (-) button to zoom out of the map

Alternatively if you have an mouse with a wheel you can roll the mouse wheel forward to zoom in or roll the mouse wheel backwards to zoom out



Home button

The Home Button zooms the map to the initial map extent.



Movement

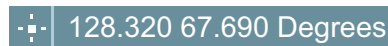
To move around the map click and hold down using the right mouse button, then drag the map in the direction required. Release to stop.



Scale bar

The Scale-bar displays a scale-bar on the map. The widget respects various coordinate systems and displays units in English or metric values. The scale-bar takes into account projection distortion and dynamically adjusts.

Alternatively see Measurement widget (page 11)



Coordinates

The coordinates are shown in decimal degrees. Longitude is the first number and Latitude is the second number.

Moving the mouse around the map environment you will see the degrees changing.



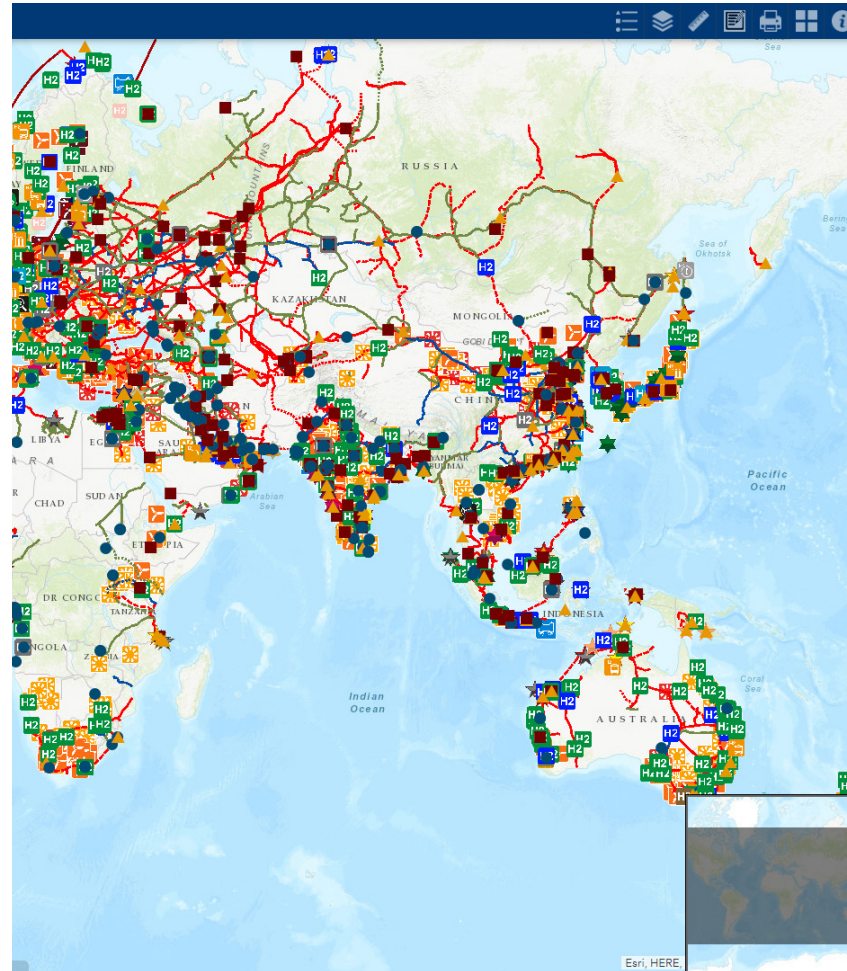
If you require a specific coordinate click the cross-hair

Cross-hair

MAP CONTROLS

Overview map control

The Overview Map widget displays the current extent of the map within the context of a larger area and updates whenever the map extent changes. The current extent of the map is represented in the overview map as a grey rectangle that can be dragged to modify the extent of the current view. You can expand or fold the widget. When the widget is expanded, you can also maximize or minimize it.



Open / close

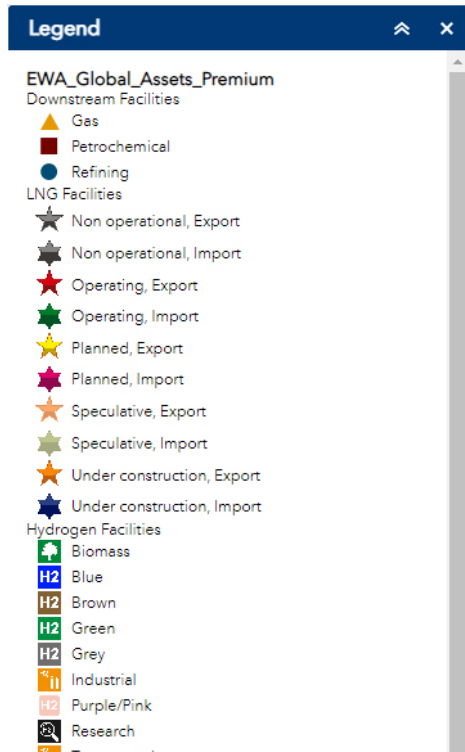
MAP WIDGETS

Legend



Legend widget

The Legend widget displays labels and symbols for layers in the map. The Legend widget is set to automatically update when the visibility of a layer or sub-layer changes. When no operational layers are rendered in the map, the Legend widget is blank.

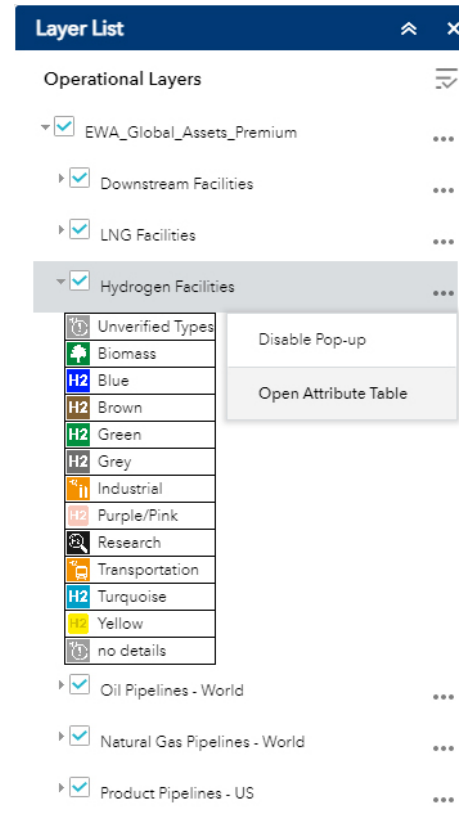


Layers



Layer list widget

The Layer List widget provides a list of operational layers and their symbols, and allows you to turn individual layers on and off. Each layer in the list has a check box that allows you to easily control its visibility. Layers having expansion arrows indicate that they contain sub-layers or subtypes.

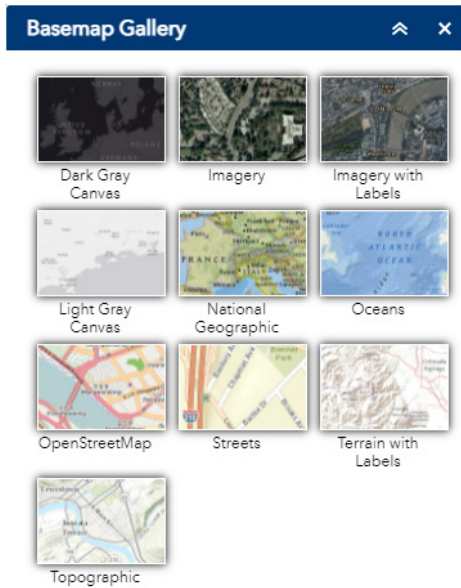


MAP WIDGETS

Basemaps



Basemap Gallery widget
The Basemap Gallery widget presents a gallery of basemaps and allows you to select one from the gallery as your application’s basemap.



Measurement

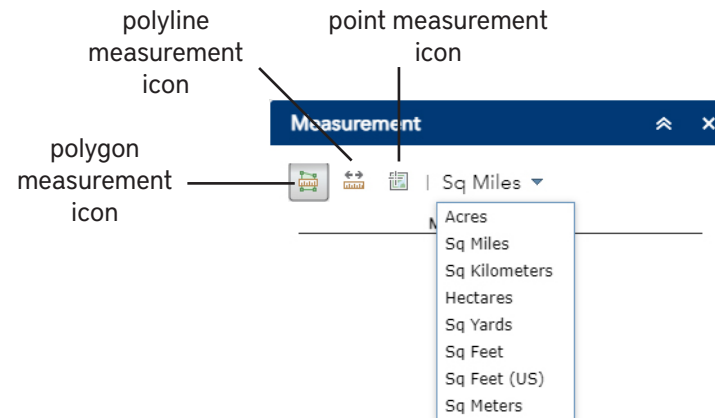


Measurement widget
The Measurement widget allows the user to measure the area of a polygon, length of a line, or find the coordinates of a point.

Click the **point measurement icon**: Point measurement icon and click a point on the map. The Measurement widget displays the coordinates for the point in Degrees (decimal). You may change the coordinate display format to degrees/minutes/seconds by changing the Degrees drop-down to DMS.

Click the **polyline measurement icon**: Polyline measurement icon and draw a polyline on the map by clicking two or more points. Double-click to finish drawing the polyline. The Measurement widget displays the total length of the polyline, using the defined Default Length Unit. To change the length unit, select the applicable unit of measure from the Miles drop-down menu.

Click the **polygon measurement icon**: Polygon measurement icon and draw a polygon on the map by clicking three or more points. Double-click to finish drawing the polygon. The Measurement widget displays the total area of the polygon, using the defined Default Area Unit. To change the area unit, select the applicable unit of measure from the Acres drop-down menu.



MAP WIDGETS

Printing



Print widget

Select this button to print your map. Select from the printer variables. GEI Mapping has predefined the Layout options. Formats available include EPS, GIF, JPG, PDF, PNG and SVG. Customise the map scale/ extent, Layout meta-data and Print quality.

The printed maps can be used for internal company reports and presentations

Print
⌵
✕

Map Title:

Layout:

Format:

Map scale/extent:

Preserve: map scale map extent

Force scale: current

Layout metadata:

Author:

Copyright:

Include legend:

MAP_ONLY size:

Width (px):

Height (px):

Print quality:

DPI:

Information



Information widget

This widget offers general background information to the application including map definitions, sources, acknowledgements, disclaimer and more.

Check for dynamic links to other Global Energy Infrastructure or Gulf Energy Information products.

Information
⌵
✕

WHAT & WHERE DO WE TRACK?

Downstream

Refining & Petrochemicals: All projects globally regardless of capacity or current status, including expansions and modernization projects.

Hydrogen: All projects globally regardless of capacity or current status, including production facilities, research facilities, demonstration plants, as well as industrial and transportation applications.

LNG: All projects globally involved in the international trade of LNG (this excludes peak-shaving plants), with a minimum status of speculative. Editorial judgement is taken where multiple location options are put forward for a single project.

MAP WIDGETS

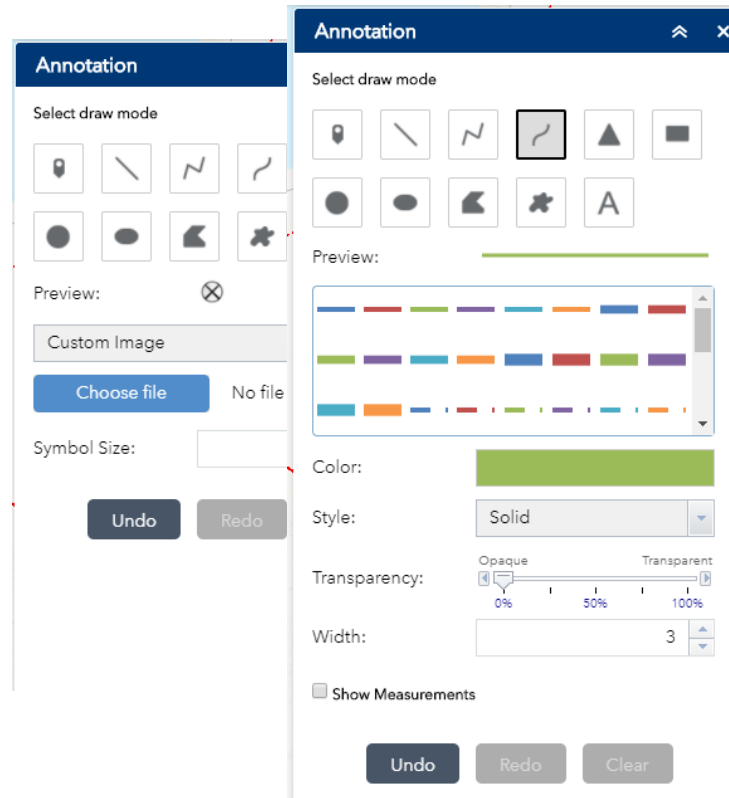
Printing



Annotation widget

Select this button to annotate your map. Users can add points, lines, shapes and text which will be overlaid on the map. Select from colour, style and transparency. Then add to the map. These annotations will be included in any printing.

Note. Annotations will be lost once your session has finished and can not be saved



ATTRIBUTES TABLE

The Attribute Table widget displays a tabular view of operational layers' attributes. It displays at the bottom of your web application and can be opened, resized, or closed. When more than one layer's attributes display, multiple tabs automatically generate in the attribute panel allowing you to switch among the attribute tables. You can use the widget's configuration window to specify which layer or layers are included in the tabular view, which fields show, and if the tabular view can be exported.

Create custom filters and queries of the attribute table

Show/Hide columns

Show/Hide columns

Export data out in CSV format for use in spreadsheets

Country	Project Name	Location	Status	Start Date	Owner/Operator	Project Shareholders	Project Capacity (Export Only)	No. of Trains (Export Only)	Process Method (Export Only)	Origin of gas / Destination of LNG	Storage capacity (Thousand cm)	Comments	Capex (US\$ Millions)	Contact name
Algeria	Arzew GL1Z	Onshore	Operating	1977	Sonatrach	Sonatrach (100%)	7.95	6	AP C3MR	Hassi R'Mel	300		0.00	Benyahia Riad
Algeria	Arzew GL2Z	Onshore	Operating	1981	Sonatrach	Sonatrach (100%)	8.40	6	AP C3MR	Hassi R'Mel	300		0.00	Benyahia Riad
Algeria	Arzew GL3Z (Gassi Touil LNG)	Onshore	Operating	2013	Sonatrach	Sonatrach (100%)	3.20	1	AP C3MR / SplitMR	Gassi Touil; Hamra; Rhourde Nouss	0		0.00	Benyahia Riad
Algeria	Arzew GL4Z (Camel)	Onshore	Non Operational	0	Sonatrach	Sonatrach (100%)	0.90	3	Classic Cascade	Hassi R'Mel	33	Closed: Taken out of production in 2010	0.00	Benyahia Riad
Algeria	Skikda GL1K Phase I & II	Onshore	Operating	1972	Sonatrach	Sonatrach (100%)	4.70	3	TEAL (1), PRICO (2-3)	Hassi R'Mel	308	Trains added or current train(s) expanded 1978 and 1981	0.00	Benyahia Riad

Double click record Highlights and zooms to in the application

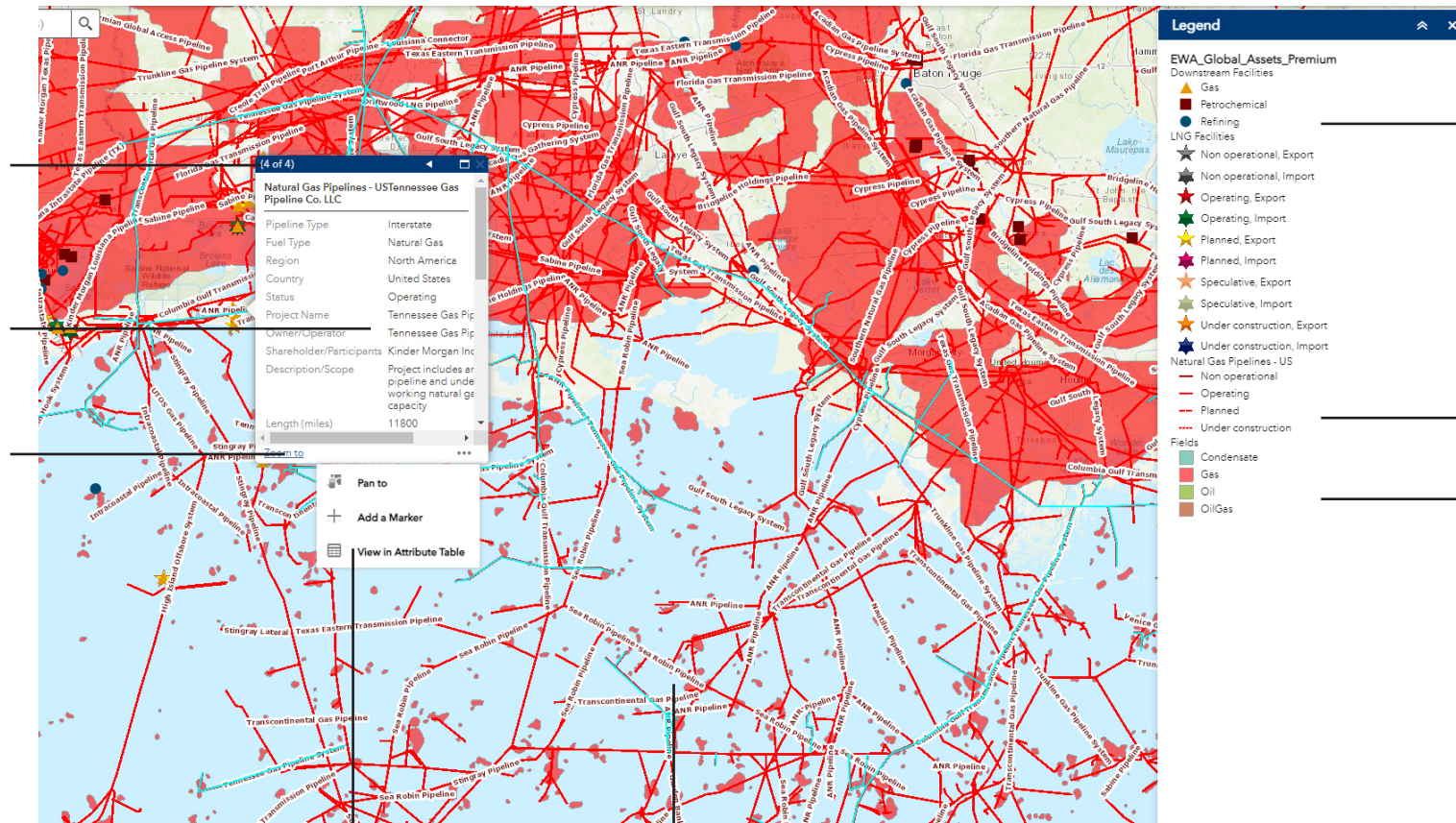
USING THE MAP

The elements of the map have detailed attribute data associated with them. Three types of mapping element are available in this application. Point elements (LNG projects), Line elements (gas pipelines) and Polygon elements (Condensate, Gas and Oil/Gas fields). Each of these elements can be interacted with and selected using the mouse pointer. When selected a Pop-up box will open with the attribute data. You can use the Pop-up box tools to **Zoom to**, **Pan to**, **Add a Marker** or **View in the Attribute Table**

If a project has more than one shareholder the number of records is shown here. To view each record click the white arrow button

Pop-up box includes all attribute information

Zoom to function



Point elements

Line elements

Polygon elements

Pan to function. This pans the map to the selected feature
Add a Marker function. Adds a marker onto the map
View in the Attribute Table function. Open the main attribute table

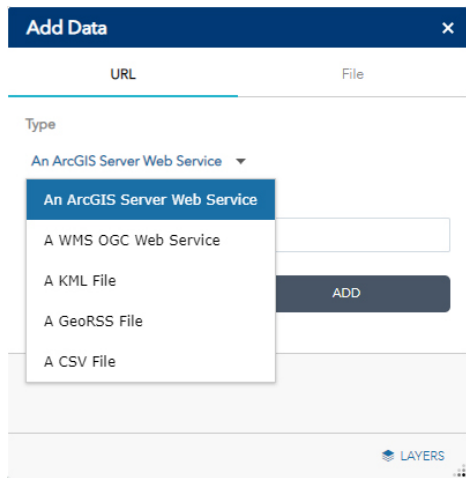
ADD DATA

Import your own data



Add data button

Use this button to turn the Add Data tab on and off. By default the tab is switched off when the application loads

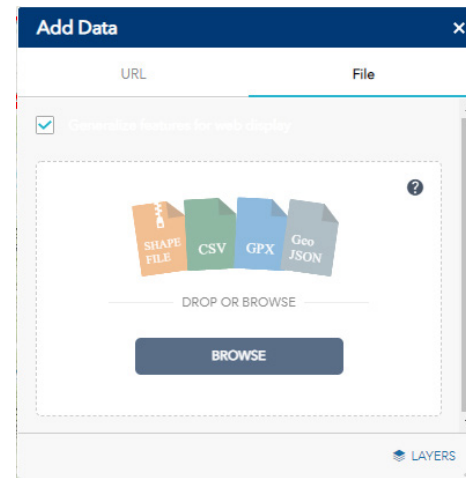


To add your own data to the application is easy. You link to an online web service or import a file from your local server or computer.

To add a layer via a web service they will need be in the following formats:

- ArcGIS Server Web Service
- WMS OGC Web Service
- KML file
- GeoRSS file
- CSV file

Simply add the URL and click on the 'ADD' button. Your data will instantly display on the map.



To add a file these need to be in the following formats:

- Shapefile (.zip, ZIP archive containing all shapefiles)
- CSV file (.csv, with address or latitude, longitude and comma, semi-colon or tab-delimited)
- GPX file(.gpx, GPS Exchange Format)
- GeoJSON file (.geo.json or .geojson)
- Maximum of 1,000 features is allowed

Simply drop or browse for the file. Your data will instantly display on the map.

If you require to remove the layer click in the layers at the bottom of the box and select the bin symbol to remove

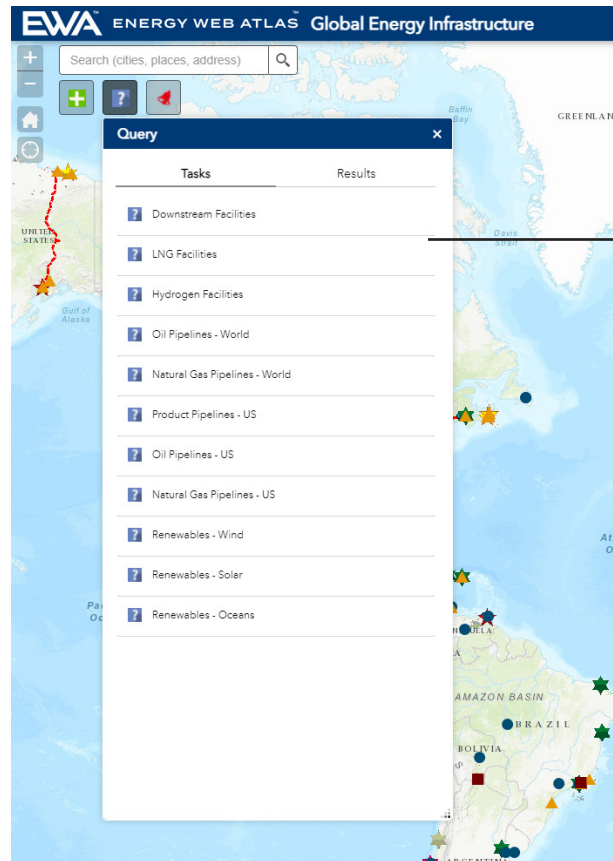
Use the layers widget (page 6) to rearrange the order of the imported layers

QUERY DATA

Ask questions of the data



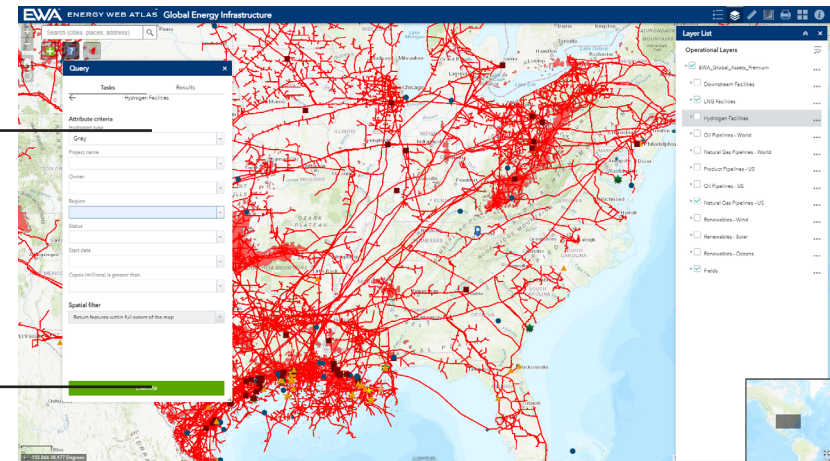
Query Data Tool
Use this button to turn the Query Data tab on and off. By default the tab is switched off when the application loads



Select any of the feature class layers

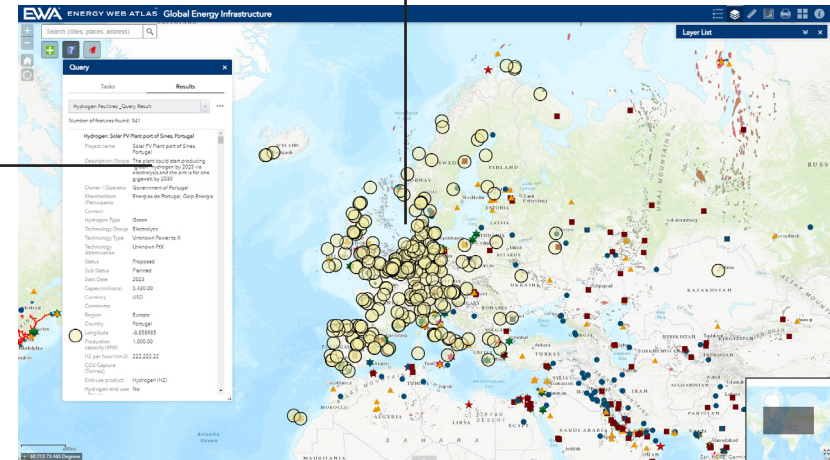
Under 'Tasks' Define your query using the drop down menus

Click EXECUTE



Query Results highlighted. These can also be selected

Under 'Results' All your query results will be displayed here Click to view



Use the layers widget (page 6) to rearrange the order of the queries

DATA ALERTS

Stay informed



Data Alerts Tool

Use this button to turn the Data Alerts tab on and off. By default the tab is switched off when the application loads

Active	Business Sector	Alert Name	Expires On
<input checked="" type="checkbox"/>	LNG	Northern Europe	17/05/2019
<input checked="" type="checkbox"/>	LNG	China	23/05/2019
<input checked="" type="checkbox"/>	LNG	Japan	17/05/2019
<input checked="" type="checkbox"/>	LNG	US Gulf Coast	17/05/2019
<input checked="" type="checkbox"/>	LNG	Thailand	08/06/2019

Create New

Hover and select to create a new email alert

Click to create a alert area or select Alert for all Geographies to receive global updates

Name you alert
Select the expiry data

Add up to 5 email addresses to receive the updates*

Select what you want to be updated about

Select a data layer

Defined an area that triggers alerts

Includes GEI Mapping map link directly linking back to the project

Business Sector	Alert Name	Project Name	Alert Type	New Item	Old Item	EWA Map Link	Email Address
Hydrogen	All Geographies	Acis Supergrid Green Hydrogen Project	Operator Change	Porteforce Future Industries, Port of Acis Operations as of 2021-09-01	None	https://global-energy-infrastructure.com/asset_details/1415?query=hydrogen%2Ffacilities/OBJECTID%3D1415	perngme.tour@permedanetwork.com
Hydrogen	All Geographies	Adria Hydrogen Project	Operator Change	Adria Clean Hydrogen as of 2021-08-31	None	https://global-energy-infrastructure.com/asset_details/1414?query=hydrogen%2Ffacilities/OBJECTID%3D1414	perngme.tour@permedanetwork.com
Hydrogen	All Geographies	Blaze On Green Hydrogen Project	Operator Change	Energy Energy as of 2021-08-31	None	https://global-energy-infrastructure.com/asset_details/1417?query=hydrogen%2Ffacilities/OBJECTID%3D1417	perngme.tour@permedanetwork.com
Hydrogen	All Geographies	Cambridge Green Hydrogen Project	Operator Change	Fusion Fuel, BGC Energy as of 2021-08-31	None	https://global-energy-infrastructure.com/asset_details/1416?query=hydrogen%2Ffacilities/OBJECTID%3D1416	perngme.tour@permedanetwork.com
Hydrogen	All Geographies	Cambridge Green Hydrogen Project	Operator Change	Eastlink as of 2021-09-01	None	https://global-energy-infrastructure.com/asset_details/1448?query=hydrogen%2Ffacilities/OBJECTID%3D1448	perngme.tour@permedanetwork.com
Hydrogen	All Geographies	H2Scale Network - Port of Houston	Operator Change	Produce Energy as of 2021-08-31	None	https://global-energy-infrastructure.com/asset_details/1449?query=hydrogen%2Ffacilities/OBJECTID%3D1449	perngme.tour@permedanetwork.com
Hydrogen	All Geographies	H2Scale Network - Port of Houston	Operator Change	Port of Houston as of 2021-08-31	None	https://global-energy-infrastructure.com/asset_details/1447?query=hydrogen%2Ffacilities/OBJECTID%3D1447	perngme.tour@permedanetwork.com
Hydrogen	All Geographies	H2Scale Network - UT	Operator Change	University of Texas at Austin as of 2021-08-31	None	https://global-energy-infrastructure.com/asset_details/1439?query=hydrogen%2Ffacilities/OBJECTID%3D1439	perngme.tour@permedanetwork.com

Expect to receive a daily email with update news to your inbox

*Note only subscribers will be able to use the GEI Mapping Map link

TECHNICAL

Supported browsers

The GEI Mapping application supports most website browsers on multiple operating systems. The following are supported by the application:

- Chrome
- Firefox
- Safari 3 and later
- Edge
- Internet Explorer 11
- iOS Safari
- Chrome for Android

If you are experiencing technical issues with any part of the application or have general inquiries please contact a member of the GEI Mapping team (see contacts page 16)



ArcGIS Enterprise - Portal for ArcGIS has been used in the development of our applications.

CONTACTS

If you are experiencing technical difficulties or have questions about the mapping application, please contact us for assistance.

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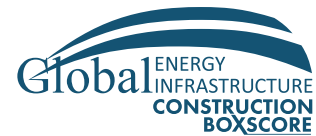
Our data products from Gulf Energy Information include:



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