



Gulf Energy®

Produced by  
**PE Maps**

Sponsored by

**ExxonMobil**

# INTERACTIVE WORLD LNG MAP & DASHBOARD

## USER GUIDE

Version 2.0



## WELCOME

Welcome to the **PE Maps Interactive World LNG Map & Dashboard** User Guide. Choose a topic from the right to find answers, get step-by-step instructions, and make the most from the dashboard.

Our new data dashboard is an information management tool that visually tracks, analyses and displays key performance indicators (KPI), metrics and key data points for the LNG sector. Included in the dashboard is our world renowned Interactive World LNG map which is updated on the fly so that the information is always up-to-date. The map features LNG regasification terminals, LNG liquefaction plants, gasfields and gas pipelines globally.

Dynamic graphs and tables link to the map and other live databases to provide a full status view of the LNG and wider gas industries.

The **PE Maps Interactive World LNG Map & Dashboard** has been created utilising technology from the Energy Web Atlas platform incorporating ESRI ArcMap software which allows users to zoom from global overview to country-level detail, access project data, including status and ownership.

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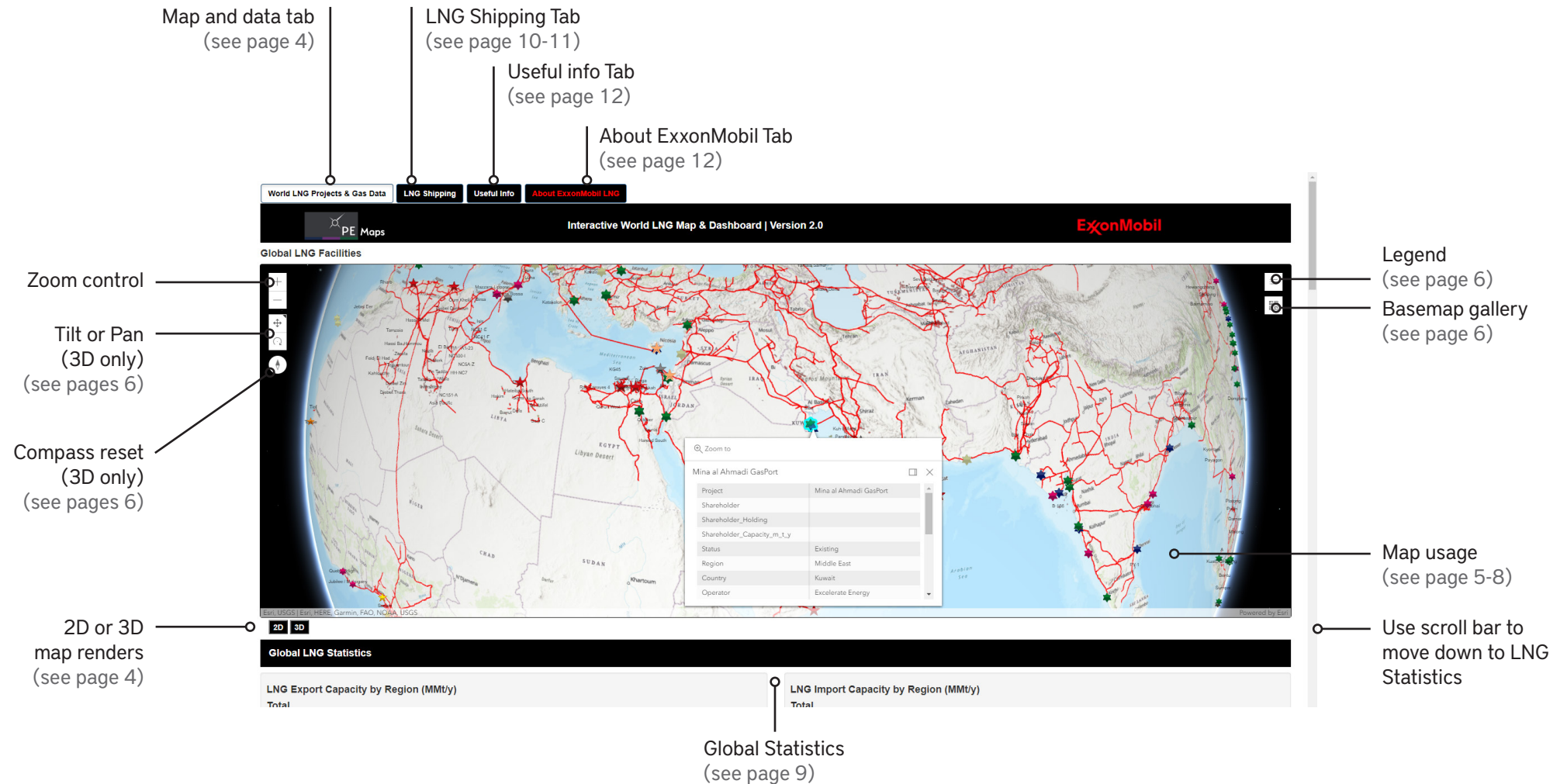
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## DASHBOARD INTERFACE

The dashboard is microsite of maps and data for the global LNG industry in a series of tabs only available on the internet. The dashboard opens by default on the World LNG Projects and Gas Data tab. Other tabs include LNG shipping, useful info and About ExxonMobil. To change page click on the tab at top of the screen. Each page contains multiple maps or graphics, to view simply scroll up and down the page. Below is the general interface of the dashboard.

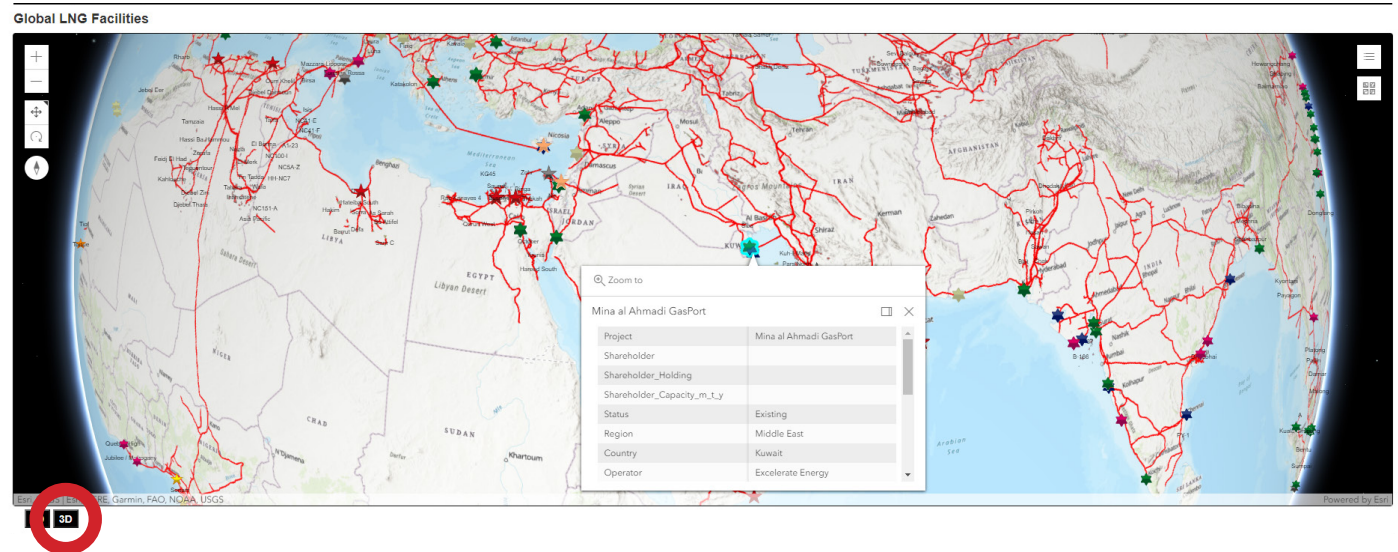


## MAP CONTROLS - 2D OR 3D

### 3D map option

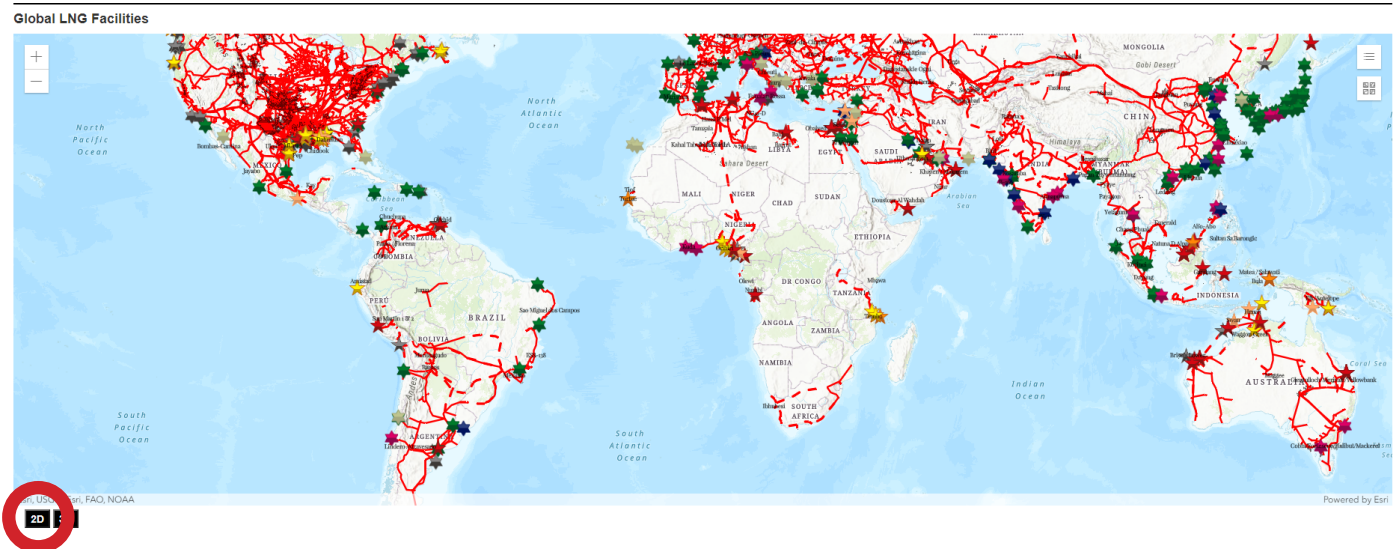
3D offers a unique way to view the global LNG and natural gas infrastructure. 3D map provides a realistic view of a location of infrastructure and projects. The map can be tilted and rotated to give alternative perspectives over traditional 2D mapping formats

By default **PE Maps** has set the map render to 3D. To select 3D click the button in the bottom left corner of the map. This button also acts as a reset button



### 2D map option

2D offers a traditional method in which to view the maps data. To select 2D click the button in the bottom left corner of the map. This button also acts as a reset button



## MAP CONTROLS - 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.

**Note:** The functionality is the same for both 2D and 3D map renders

The screenshot displays the PE Maps application interface. The map shows various LNG facilities and pipelines. Key features and controls are labeled:

- Polygon elements (gasfields):** Indicated by a line pointing to a red-shaded area on the map.
- Line elements (gas pipelines):** Indicated by a line pointing to a red line on the map.
- Dock / undock pop-up panel:** Indicated by a line pointing to the 'Global LNG Facilities' panel on the right side of the map.
- Pop-up box Includes all attribute information:** Indicated by a line pointing to the 'Gorgon LNG' pop-up box in the center of the map.
- Zoom to function:** Indicated by a line pointing to the 'Zoom to' button in the 'Gorgon LNG' pop-up box.
- Point elements (LNG facilities):** Indicated by a line pointing to a blue dot on the map.
- Multiple records for the same feature or stacked features. Use arrows forward and back to view additional records:** Indicated by a line pointing to the navigation arrows in the 'Global LNG Facilities' panel.

The 'Gorgon LNG' pop-up box contains the following data:

Project	Gorgon LNG
Shareholder	ExxonMobil
Shareholder_Holding	25.00%
Shareholder_Capacity_m_t_y	3.9
Status	Existing
Region	Asia Pacific
Country	Australia
Operator	Chevron

The 'Global LNG Facilities' panel on the right shows a legend for the status of the facilities:

- Existing, Export (Red star)
- Existing, Import (Green star)
- Under Construction, Export (Yellow star)
- Under Construction, Import (Blue star)

At the bottom left, there are buttons for '2D' and '3D' map views. The bottom right corner indicates 'Powered by Esri'.

## MAP CONTROLS - WIDGETS



### 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

### Movement (2D map)

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



### Movement (3D map)

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

Select the bottom icon to tilt / rotate. Hold down using the right mouse button, then drag the map in the direction required

The respective widget is active when the black triangle is in the top right corner



### Map Reset / 2D or 3D

To reset the map to the original extent click either 2D or 3D. To change render style click either 2D or 3D



### Compass Reset

Click this button to restore the maps orientation so that north is at the top of the screen

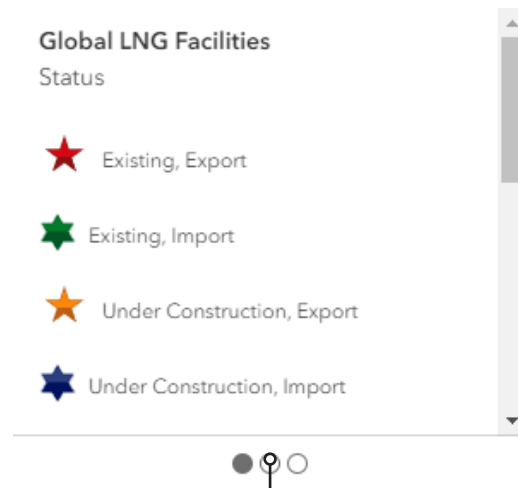


## MAP CONTROLS - WIDGETS



### Legend

The Legend widget displays labels and symbols for layers in the map. The Legend 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.

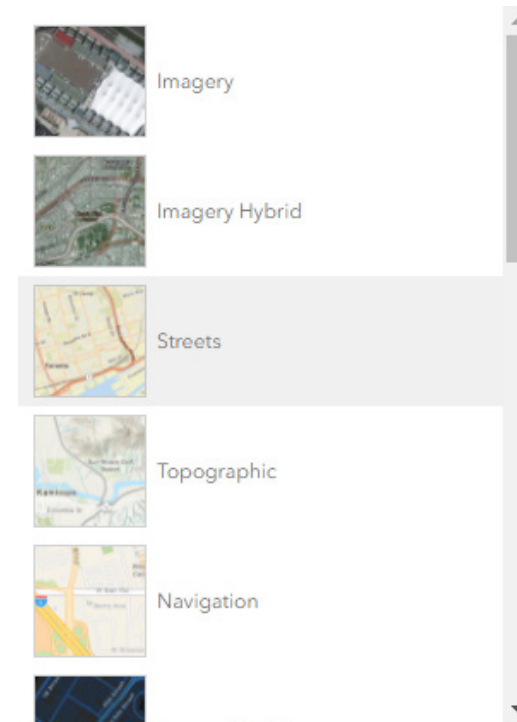


click for more features



### Basemap gallery

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

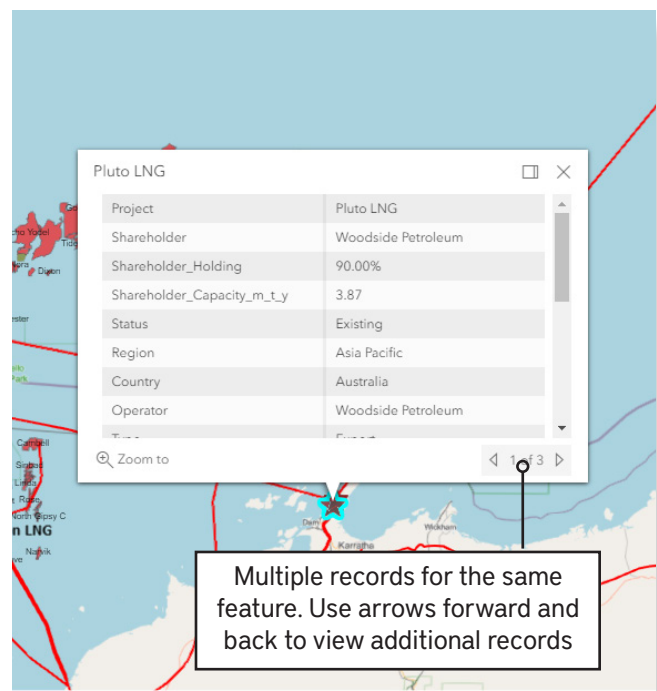


Minimises the legend and basemap gallery windows

MAP DATA

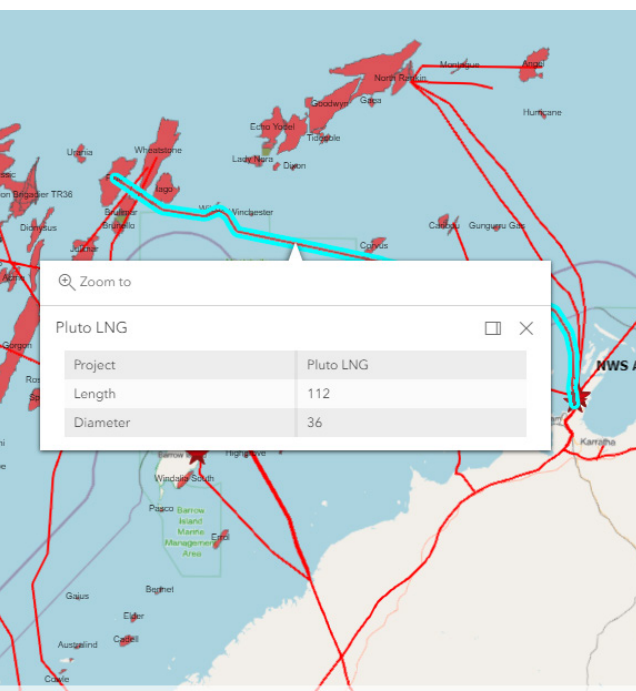
The map incorporates information from our live databases. This information is accessible by clicking on a LNG star, gas pipeline or gasfield. The selected feature will be highlighted and a pop-up box will open with the associated data for that feature. Data from this map can not be downloaded.

LNG data



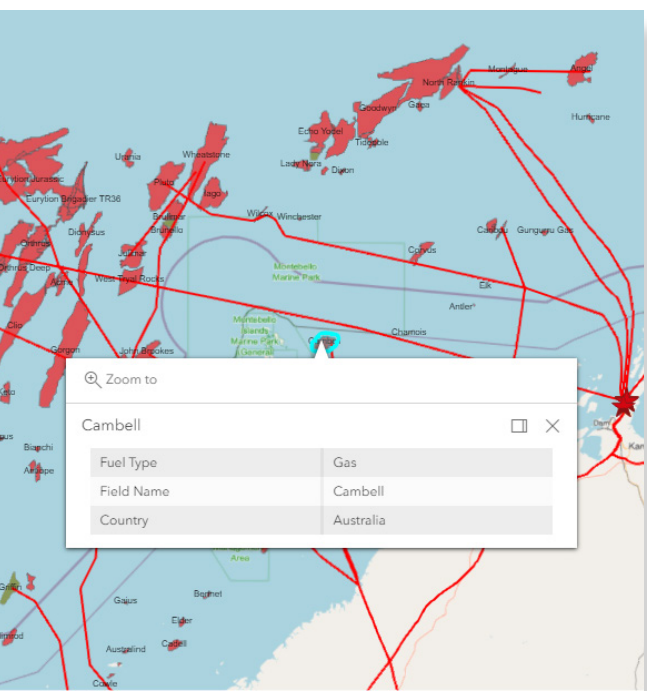
LNG data included: Project name, Status (existing, under construction, planned, speculative), Start-up year, Type (export or import), Operator, Shareholder, Shareholder holding %, Shareholder capacity (m t/y), Project capacity (m t/y), Origin / source of gas, Process method (export only), Number of trains (export only), Storage ('000cm), Comments, Region, Country, Location (onshore or offshore)

Pipeline data



Pipeline data included: Project name, length in miles and diameter in inches

Gasfield data

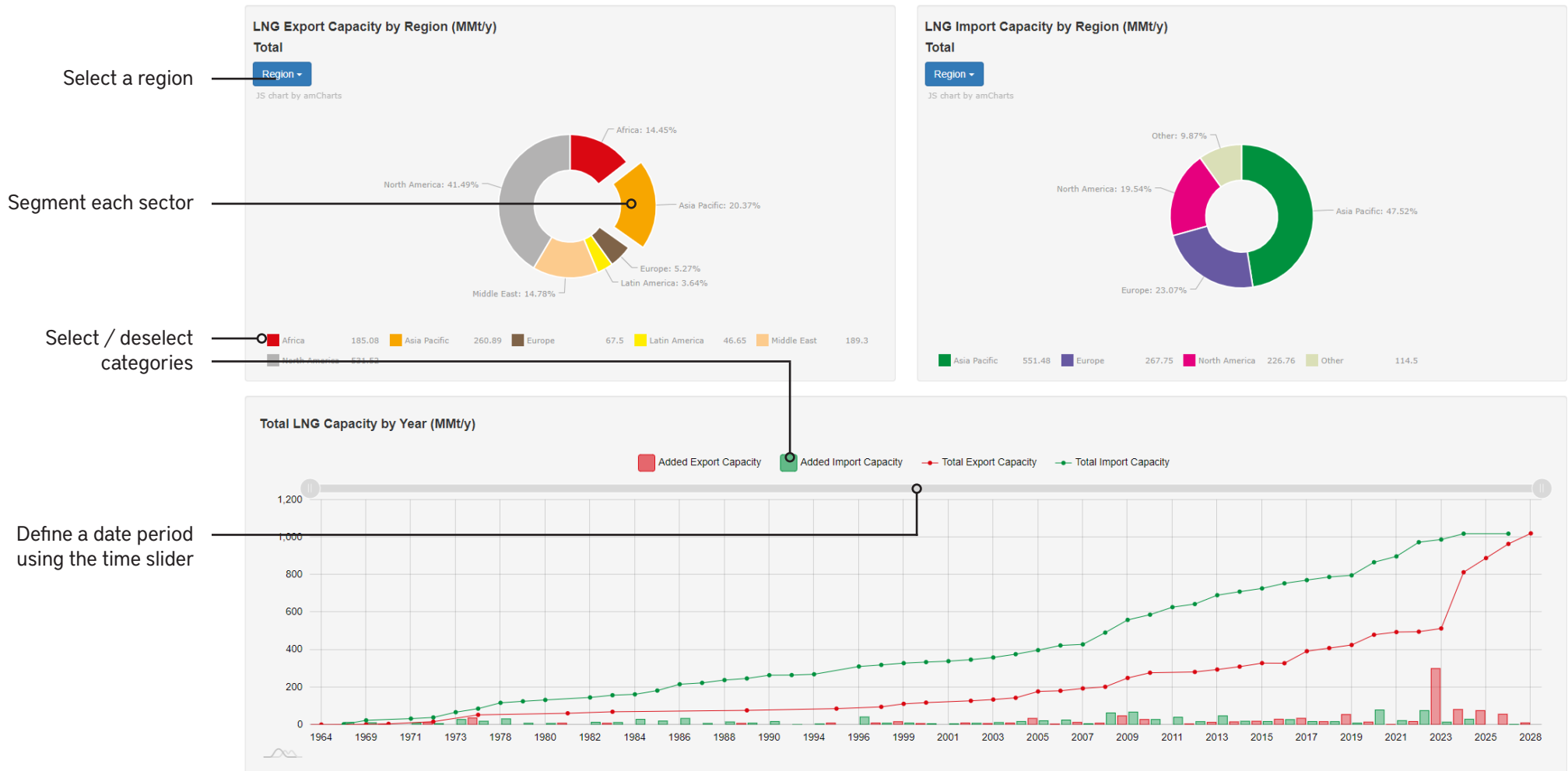


Data included: Fuel type (gas, condensate or oil and gas), Field name, country



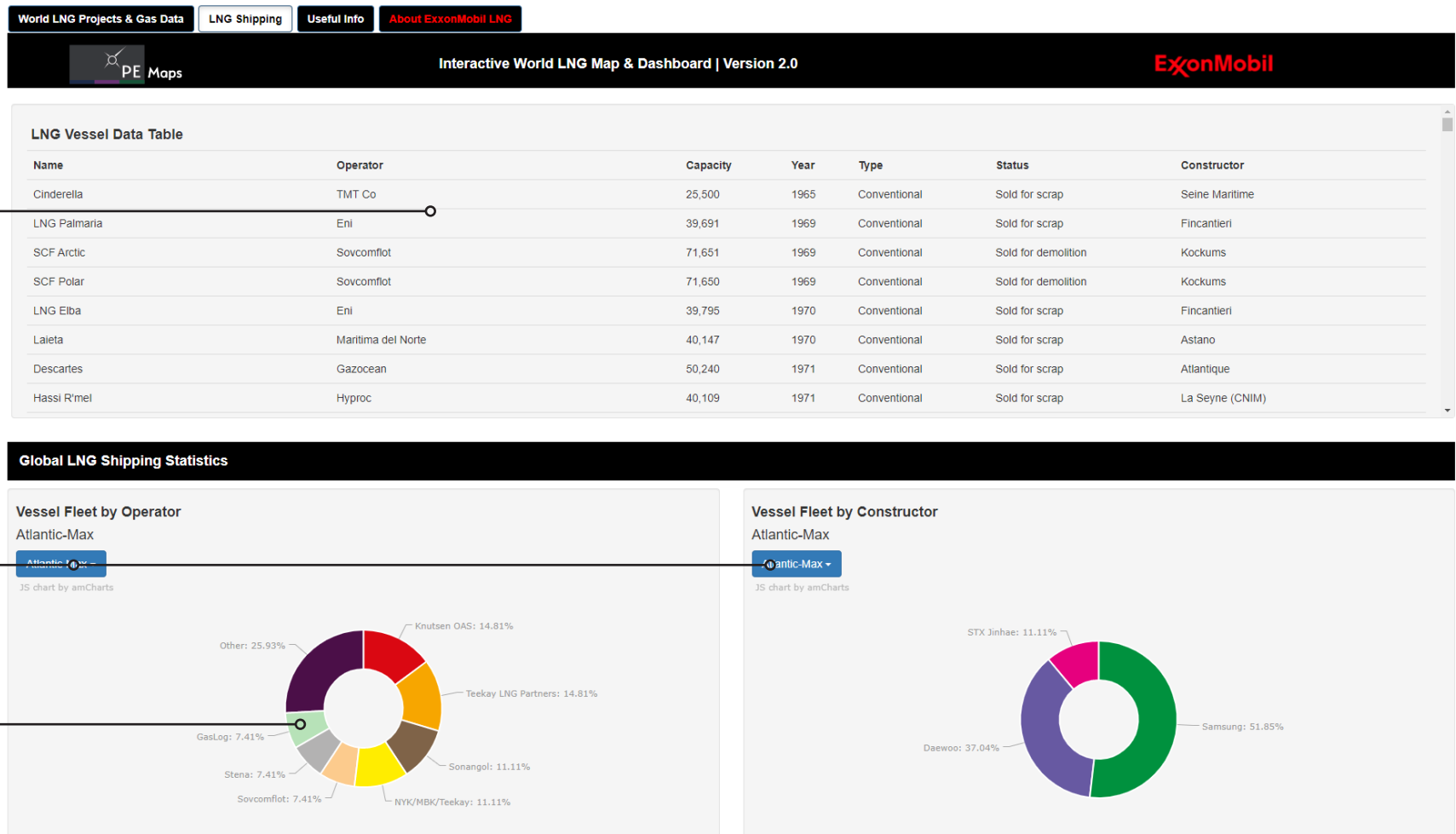
## STATISTICS

**PE Maps** has incorporated valuable industry LNG and Natural Gas statistics. The graphs and tables in the dashboard are driven by the live information in our databases. As information is updated in the mapping features this dynamically updates the graphs and tables. All the LNG statistics are dynamically linked our own data. The global gas statistics are annualised figures derived from the Energy Information Administration - EIA (Official Energy Statistics from the U.S. Government), further information can be obtained from [www.eia.gov](http://www.eia.gov)



## SHIPPING

**PE Maps** has worked with EA Gibson Shipbrokers to provide a full LNG vessel listing. This includes those vessels that are operational, on conversion, on order or sold for scrap or demolition. In addition to the full vessel listing, we have incorporated a series of graphics that are dynamically linked to those listings. So, as vessel status changes as will the graphics. Shipping plays a vital role in the movement of liquefied natural gas and we have provided some other graphics on the types of LNG vessel and how much LNG has been shipped in 2019.



## SHIPPING - DISTANCES

Interactive shipping distances map includes a sample of shipping routes. Select the start point from the dropdown menu and then the sample routes will be displayed on the map. Simple click on the routes marked in RED to open the attribute pop-up. This provides all the distance and time details

Users can plot there own routes using the tools provided in the map (distance only)

Use line measurement tools  
to create your own routes

The screenshot shows the 'Shipping Distance Maps' application. At the top, a dropdown menu is set to 'Arzew (Algeria)'. The map displays a route from Arzew, Algeria, to France, marked with a dashed orange line. A pop-up window for 'Arzew (Algeria)' provides details: Name (Arzew (Algeria)), Start Country (Algeria), Start Plant (Arzew), Destination Country (France), Destination Terminal (Fos-sur-Mer), Distance (nm) (2232), and Time (days) (5.5). A second pop-up window shows the 'Unit' set to 'Metric' and the 'Distance' as '7,565.25 km'. A 'New measurement' button is visible. The map includes a zoom control and a 'Zoom to' search bar. The bottom of the interface features logos for 'The Petroleum Economist Ltd 2020', 'PE Media Network', 'Powered by EWA ENERGY WEB ATLAS', and 'Gulf Energy®'.

Sample routes

Attribute table showing start and destination distance and time

Click points to draw route(s), double click to stop

Shows distance drawn

For own routes select your metric



## OTHER TABS

Two further tabs with further information have been provided

Definitions, disclaimer, sources,  
contact details and links to **PE  
Maps** social media

World LNG Projects & Gas Data
LNG Shipping
Useful info
About ExxonMobil LNG

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### Definitions

#### Liquefaction (export) plant

**Existing**  
Plant that is currently built and producing LNG for the market.

**Under Construction**  
Plant has had all the necessary approvals and has started construction.

**Planned or proposed**  
Any one of the following: Plant that has received all necessary approvals but has not started construction, plant that has received approval from local or national government, plant that has received firm financial backing or plant that has had Heads of Agreement (HOA) or Letter of Intent (LOI) to deliver LNG to a third party.

**Speculative**  
Plant that has gone past the stage of being a feasibility study, then any one of the following: Plant that has been put forward but not received local or national government approval, plant that has been put forward but not received any firm financial backing or plant that has been put forward but has no HOA or LOI from a third party.

**Suspended**  
Plant that has been decommissioned suspended or postponed but still retained due to its significance. The plant may well be reactivated in the future.

### Regasification (import) terminal

**Existing**  
Terminal that is currently built and receiving LNG from the market.

**Under Construction**  
Terminal has had all the necessary approvals and has started construction.

**Planned or proposed**  
Any one of the following: Terminal that has received all necessary approvals but has not started construction, terminal that has received approval from local or national government, terminal that has received firm financial backing, terminal that has had Heads of Agreement (HOA) or Letter of Intent (LOI) to receive LNG from a third party, US terminal onshore that has received approval from the Federal Energy Regulatory Commission (FERC) or US terminal offshore that has received approval from the United States Coast Guard (USCG) and the Maritime Administration (MARAD).

### Disclaimer

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### Useful Contacts

If you are experiencing technical difficulties or have questions about the mapping application, please contact us for assistance. Additionally, please contact us with any updates and suggestions for the map so that we can continually improve the service.

**Kevin Fuller**  
Manager cartographic services  
kevin.fuller@petroleum-economist.com  
+44 20 3409 2248

**Peregrine Bush**  
Senior cartographic editor  
peregrine.bush@petroleum-economist.com  
+44 20 3409 2249

**Kate Permenter**  
GIS Developer  
kate.permenter@petroleum-economist.com  
+1 (713) 520-4464

**Paul Rodden**  
Director, Product Development  
paul.rodden@petroleum-economist.com  
+1 (713) 520-4464

### Media

For more information about PE Maps visit our social media platforms:

[Twitter](#)
[LinkedIn](#)
[Facebook](#)
[Instagram](#)

### Sources

**Petroleum Economist**  
ExxonMobil  
Cedric - Paris  
E.A. Gibson Shipbrokers Ltd  
Energy Research Institute RAS, Moscow  
russia

Tab dedicated to the work by  
ExxonMobil in the LNG sector.

World LNG Projects & Gas Data
LNG Shipping
Useful info
About ExxonMobil LNG

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### ExxonMobil – a global LNG leader

**ExxonMobil** ExxonMobil LNG is a part of Exxon Mobil Corporation, the largest publicly traded international oil and gas company. We use technology and innovation to help meet the world's growing energy needs. ExxonMobil holds an industry-leading inventory of resources, is one of the largest refiners and marketers of petroleum products, and its chemical company is one of the largest in the world.

Over the coming decades, natural gas is expected to play an increasingly important role in fueling the world's economic growth. With over 40 years of global leadership experience in LNG, ExxonMobil is active across the natural gas value chain in most major markets. Our global presence, combined with our ability to leverage expertise across our Upstream, Downstream and Chemical businesses enables us to create innovative integrated solutions. This provides an important competitive advantage and positions ExxonMobil strongly to help meet the world's growing natural gas and power demands.

**A timeline of success**  
Alongside our four decades of experience, we also have an interest in over 74 MTA of liquefaction capacity.

In 1965, ExxonMobil captured sales to the Mediterranean markets of Italy and Spain, that led to the development of an LNG project in Libya which started up in 1971.

### For more information visit:

[ExxonMobilLNG.com](#)  
[@XOM\\_NatGas](#)  
[ExxonMobil LNG](#)

**LNG Newsletter subscription**

### TECHNICAL

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#### Supported browsers

The **PE Maps** dashboard 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 **PE Maps** team  
(see contacts page 14)



ArcGIS Enterprise – Portal for ArcGIS Release version 10.5.1 has been used in the development of this application.

### CONTACTS

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

General enquiries  
[Cartographic@Petroleum-Economist.com](mailto:Cartographic@Petroleum-Economist.com)

Kevin Fuller  
Manager - Cartographic Services  
[Kevin.Fuller@Petroleum-Economist.com](mailto:Kevin.Fuller@Petroleum-Economist.com)  
+44 20 3409 2248

Peregrine Bush  
Senior Cartographic Editor  
[peregrine.bush@Petroleum-Economist.com](mailto:peregrine.bush@Petroleum-Economist.com)  
+44 20 3409 2249

Kate Permenter  
GIS Developer  
[Kate.Permenter@GulfEnergyInfo.com](mailto:Kate.Permenter@GulfEnergyInfo.com)  
+1 (713) 520-4464

Paul Rodden  
Director, Product Development  
[Paul.Rodden@GulfEnergyInfo.com](mailto:Paul.Rodden@GulfEnergyInfo.com)  
+1 (713) 520-4464

If you would like to enquire about commercial opportunities with relation to **PE Maps** interactive mapping applications, please contact:

Owen Raw-Rees  
Commercial Director  
[Owen.Raw-Rees@Petroleum-Economist.com](mailto:Owen.Raw-Rees@Petroleum-Economist.com)  
+44 20 3409 224  
+44 7752 097422 (Mobile)