



Energy Infrastructure and Markets

Database: Midstream Essentials

Comprehensive transportation, processing and
markets infrastructure data for prospect screening,
project development and new plant siting

The potential vulnerability of business operations to supply chain disruptions has come to the forefront in our industry. A firm understanding of all the links in the oil and gas chain remains a critical component to formulating viable operating and investment plans for energy industry stakeholders. The IHS Markit Midstream Essentials Database provides comprehensive coverage of oil and gas transportation, processing, storage terminal and primary market infrastructure via an online mapping interface enabling the identification of dependencies as well as commercial options upstream and downstream of assets and new projects.

Midstream Essentials Database provides the intelligence needed to support:

New Ventures Screening, Field Development and Midstream Project Feasibility

Within capital budget constraints, the ranking of prospects is a critical upstream business function with infrastructure investment often a “make or break” variable. Likewise, midstream infrastructure projects are closely tied to upstream developments, as well as regional downstream market requirements.

- **Area pipeline network options** for a prospect, including planned projects, mapped to assess pipeline tie-in length.
- **Accessibility to processing facilities** in the region - gas processing, LNG liquefaction, FPSO's and refineries evaluated.

Once a prospect enters the development phase,

- **Potential gas markets** in the power, petrochemical and industrial sectors identified by facility location, size and operator.
- **Refineries by complexity** best suited to its crude oil output's quality evaluated.
- **Export terminal and storage** access options assessed.
- **Midstream infrastructure investment projects** scoped considering requirements and dependencies along the supply chain.

New Plant Location Siting

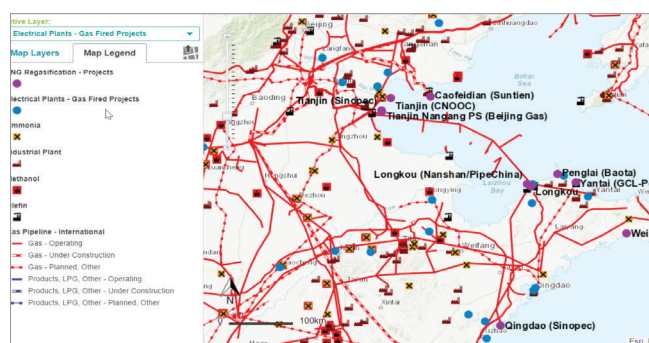
Future feedstock supply accessibility figures prominently in the identification of the viable locations for new plants, a particularly critical factor for the petrochemical industry. Midstream Essentials mapping functionality provides a “picture is worth 1000 words” view of a site's suitability.

- **Future gas, NGL and refinery supply infrastructure** and new project dependencies identified.
- **Feedstock competition** with other existing and planned consumer facilities in the area assessed.
- **Disaster vulnerability** based on elevation and distance to coast examined.

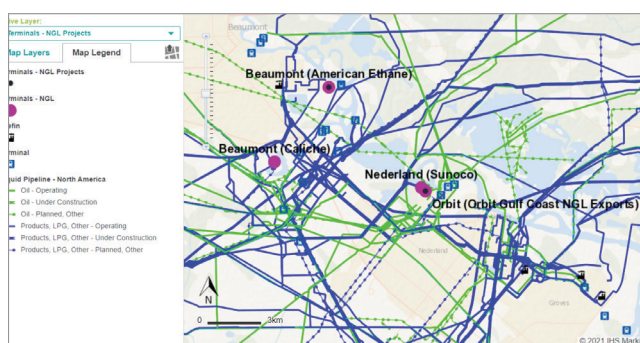
Competitor Intelligence & JV Assessment

A key aspect of a company's commercial strength is its competitive position in the oil and gas supply chain in target markets as well as globally.

- **Supply chain integration** position from the wellhead to primary markets mapped.
- **Asset dependencies** along the supply chain to other companies' facilities identified.
- **Synergies or overlaps** between the oil and gas infrastructure ownership in an area established.



LNG Regas and Gas Fired Power Plant Projects in NE China



NGL Terminals and Projects in Beaumont/Netherlands, Texas area

Common attributes for all facility types are plant name, operator, ownership structure, capacity by unit, online date by unit and location coordinates

As well as existing facilities, projects are captured along with their current status and milestones for key events. The content is outlined in the following:

Pipelines:

- Type of pipeline
- Route & length
- Diameter
- Capacity:
 - Time period
 - Reported
 - Estimated
- Looping by segment
- Entry/Exit node capacity & throughput (for Europe)

Compressor & Pumping Stations:

- Type
- Capacity
- Horsepower
- Input and output pressure

Storage Facilities:

- Type of storage
- Storage volume (Gas):
 - Working gas
 - Cushion gas
 - Total
 - Installed compressor power MW
- Total volume (Liquid)

Terminals:

- Function
- Fluid types
- Access type
- Linked storages

Floating Production Storage & Offloading (FPSO)

- Field name
- Port name
- Construction type (new or converted)
- Mooring Type
- Deadweight tonnage
- Depth
- Length
- Oil production maximum
- Oil storage capacity
- Gas processing capacity
- Gas injection capacity

Gas Processing Plants:

- Gas intake capacity
- Production capacity:
 - Ethane
 - Propane
 - Normal butane
 - Iso-butane
 - Mixed butanes
 - Natural gasoline
 - C5+
 - Condensate
 - LPG
 - NGL
 - Total

LNG Liquefaction & Regasification Facilities:

- Capacity holders
- Storage capacity
- Number of tanks
- Technology
- Capital cost

Refineries:

- Capacity by unit (bpd and tons/year)
 - Crude distillation
 - Vacuum distillation
 - Reforming
 - Catalytic cracking
 - Hydrocracking
 - Coking
 - Thermal cracking
 - Visbreaking
 - Hydrotreating
 - Alkylation
 - Isomerization
 - Polymerization
 - MTBE
 - ETBE
 - TAME
 - Lubes
 - Asphalt
 - BTX extraction
 - Hydrogen
 - Sulfur

Biofuels/Synfuels:

- Type
 - Biodiesel
 - Bioethanol
 - CTG
 - GTL
- Intake capacity
- Production capacity:
 - Ethanol
 - Diesel
 - Naphtha
 - LPG
 - Other products
 - Total liquid product
- Gas

Ports:

- Capacity Berths:
 - Berth name
 - Type of service
 - Operating status
 - Depth
 - Length
 - Maximum length overall
 - Maximum draught
 - Maximum dead weight
 - Tonnage

Power Plants:

- Plant type
- Capacity by unit & turbine type
- Primary/alternative fuel by unit

Methanol, Ammonia and Urea Fertilizer:

- Product output capacity
- Plant type
- Plant capacity

Olefin Plants:

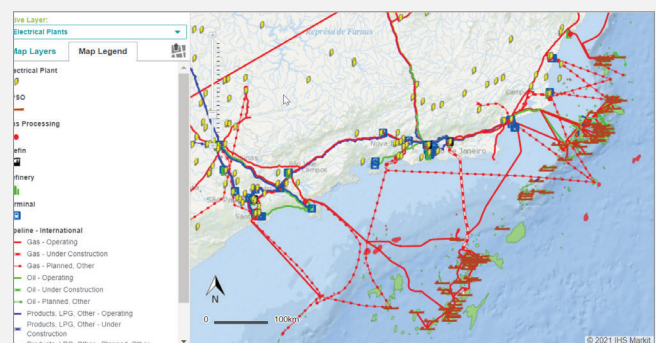
- Ethylene production capacity
- Feedstock usage by type (percentage)

Other Large Industrial Plants:

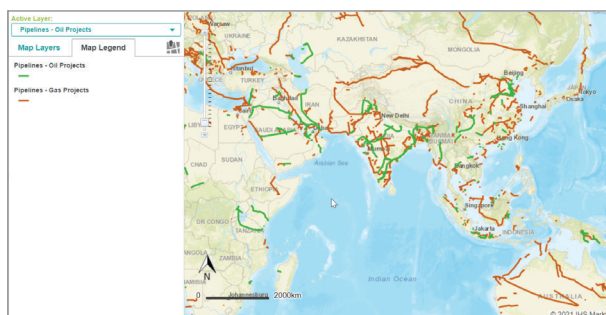
- Industrial type
- Plant production capacity
- Estimated gas consumption at full capacity

Gas Contract & Distribution Structures:

- Gas pipeline and LNG supply contracts
 - Supplier & Buyer
 - Time period
 - Plateau volume
- Gas customer profile
 - Customer type
 - Number
 - Time period
 - Sales volume



Infrastructure Adjacent Brazil's Campos and Santos Basins



Pipeline Projects in Asia- Pacific Region

Coverage of **118,000** facilities globally 

 More than **4.2 million** km of pipeline information

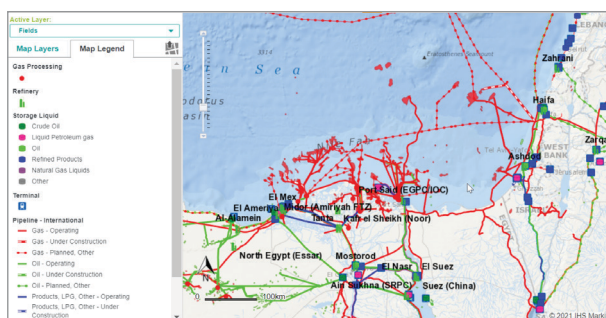
More than **10,000** sources of information 

 Over **85,000** man hours per year spent maintaining the database

Data Sourcing, Updating and Access

Clients can focus time on the implications of the information to business decisions vs data collection and assimilation.

- The database is updated daily with **key project milestones recorded**, essential in the dynamic energy market with project timetables and ownership structures in flux.
- Information is assembled in a consistent format that can be easily queried, mapped and analyzed with the 24/7 online web access provided.
- The data can be seamlessly viewed online with an IHS Market E&P data subscription providing comprehensive field, well and basin information.
- The Midstream Gold Data Access Package, an enhancement to the standard access, provides comprehensive web services, spatial data and GIS tools from ESRI
 - Access to full application data model for Midstream database via RESTful Web service API
 - Access to International Spatial Layers (ISL) via FTP download with weekly update
 - Access to International Spatial Layers via RESTful Web service API



Oil and Gas Infrastructure in West Mediterranean

About IHS Markit

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