



Pipeline & Gas Journal

2020 Global Pipeline Construction

Update and Outlook

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Executive Editor

Pipeline & Gas Journal



Pipeline & Gas Journal

connecting you to the pipeline industry worldwide

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Automation, SCADA & Controls

Cybersecurity Risk

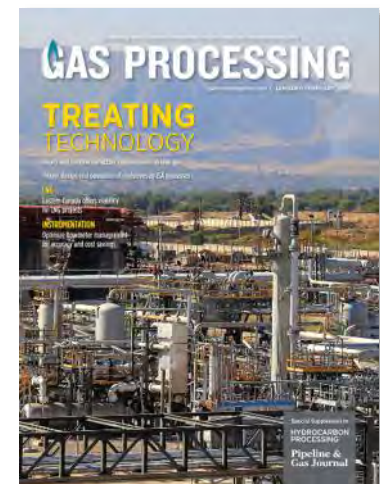
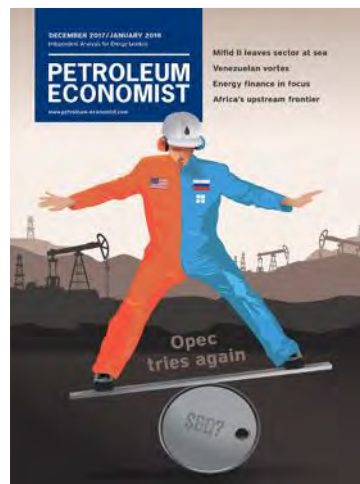
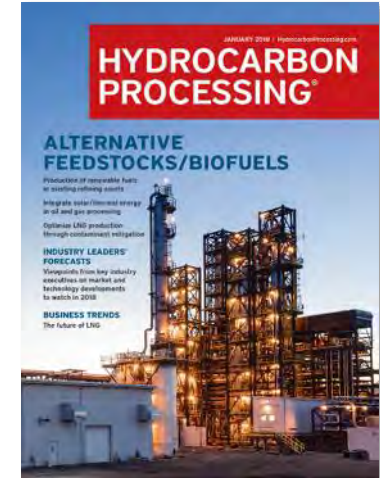
Emergency
Communications

Smart Pipelines

Canada's
Pipelines

Bakken
Revisited

**Pipeline &
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Your Partner for the Oil and Gas Industry

Take a look >

LIEBHERR

EIA: U.S. Set Records for Natural Gas Production, Consumption, Exports in 2018

Poland Says it Will Stop Importing Russian Gas Unless it Secures Better Contract

Alberta Oil Curtailments to End 'No Later' Than This Time Next Year – Premier

LATEST NEWS

- Putin: Nord Stream 2 Will be Finished by Q1 2021
- Brazil Clears Bolivian Gas Company Use Pipeline
- Mild Winter Sends U.S. Natural Gas Prices Tumbling: Reuters

- Belarus Halts Own Oil Exports to Germany, Russian Oil Transit Unaffected – Sources
- Enterprise and Navigator Load First Vessel at New Ethylene Export Terminal
- Louisiana Appeals Court Hears Arguments in Pipeline Lawsuit

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SICK Sensor Intelligence

PIPELINE PROJECT SPOTLIGHT

Here is a sample of over 400 new, planned, ongoing pipeline construction projects

Owner:	Phillips 66, Bridger Pipeline	Owner:	Wolf Midstream Partners
Project:	Liberty Pipeline	Project:	Red Wolf Crude Connector
Type:	Project includes construction of an oil pipeline from the Bakken and Rockies production areas to Corpus Christi, TX	Type:	Project includes a new crude oil pipeline to serve the Midland Basin
Length:	~1,300 miles	Length:	40 miles
Capacity:	350 Mbpd	Capacity:	120 Mbpd
Start:	NA	Start:	NA
Completion:	4Q 2020	Completion:	2019

For more information, please see Energy Web Atlas.

FEATURED ARTICLES

A Decade into DIMP, Pipe Replacement Still Keeps Workforce Busy

Pipeline & Gas Journal / December 2019, Vol. 246, No. 12

Ten years after it went into effect, the U.S. Distribution Integrity Management Program (DIMP) continued to drive much of the nation's pipeline replacement activity.

Our World Is Moving – And So Are The Pipelines

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EDITOR'S NOTEBOOK

PGJ: A Shared Pipeline Experience

Pipeline & Gas Journal / November 2019, Vol. 246, No. 11

After sitting at the keyboard for several minutes, though, I realized that hitting on the high points of a magazine that was already more than 150 years old when I joined the staff seven years ago – and has grown to be so much more than a magazine in the digital age – would be a fool's errand for a couple of reasons.

YOKOGAWA
Co-Innovating Commerce

Decoding Artificial Intelligence

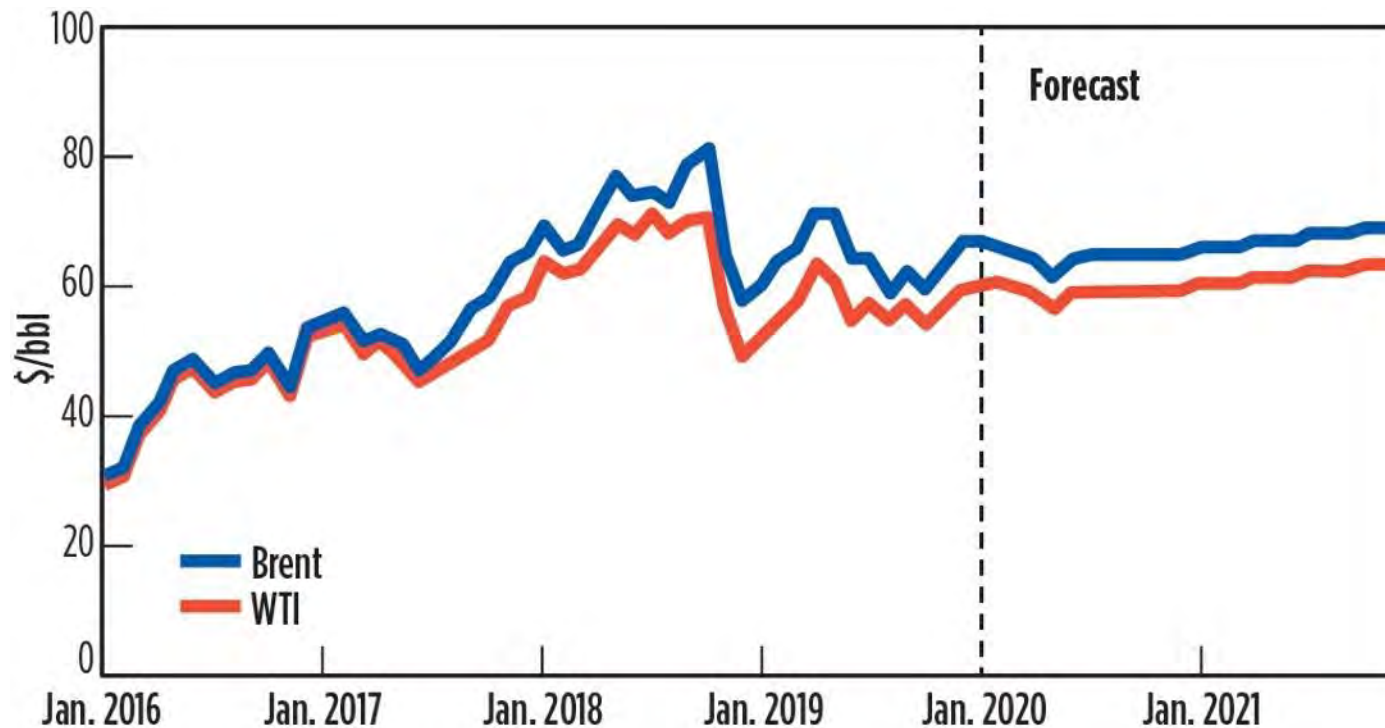
Pipeline & Gas Journal

A photograph of industrial pipes and structures at sunset. The foreground shows several large, metallic pipes running horizontally, with blue support brackets visible. In the background, there are tall industrial towers and structures, all silhouetted against a warm, orange and yellow sky. The overall scene is industrial and atmospheric.

Pipeline Construction

MARKET DRIVERS

Crude Oil Price Forecast

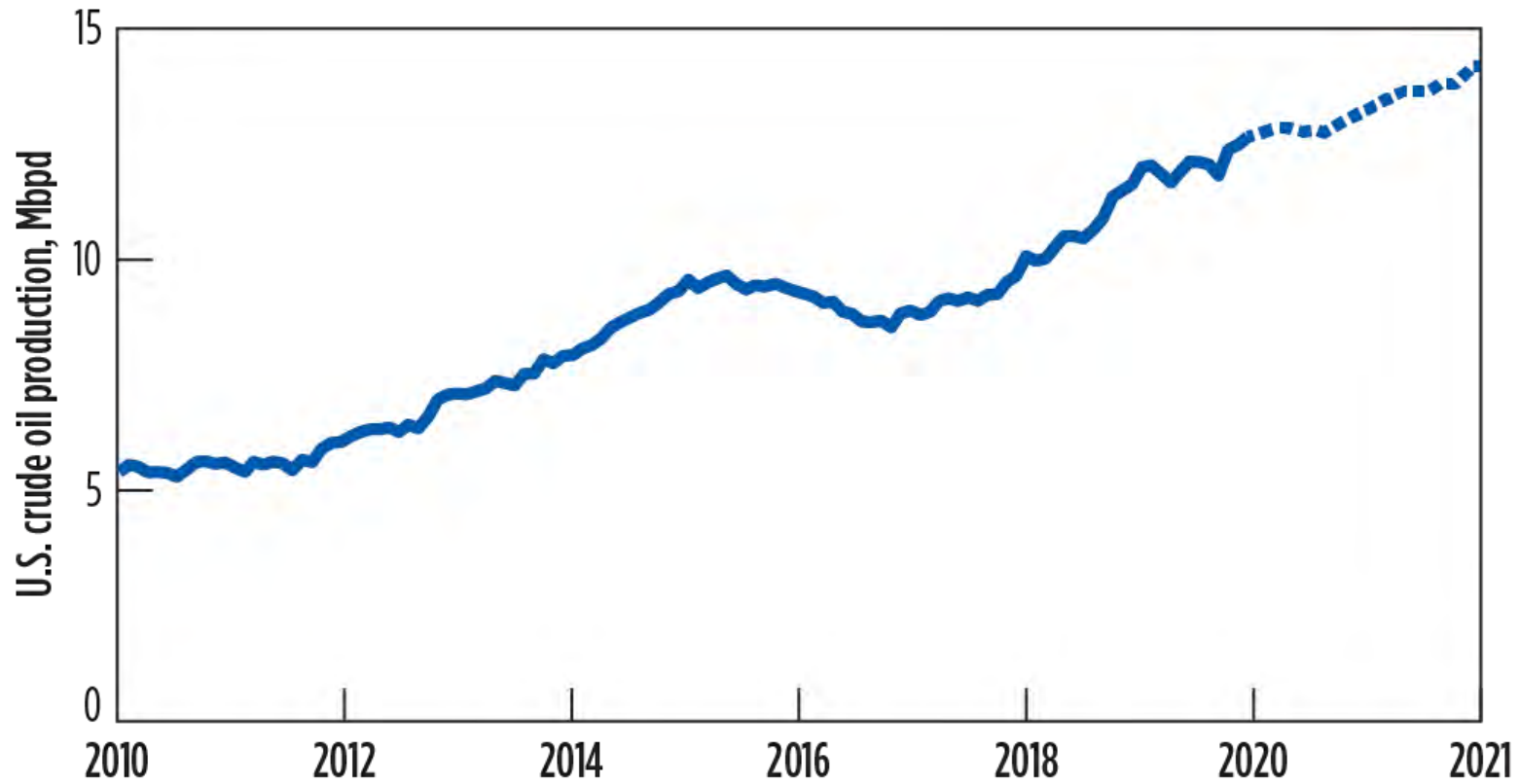


EIA:
WTI: \$59.50
Brent: \$65.00

World Oil:
WTI: \$58.35
Brent: \$63.00

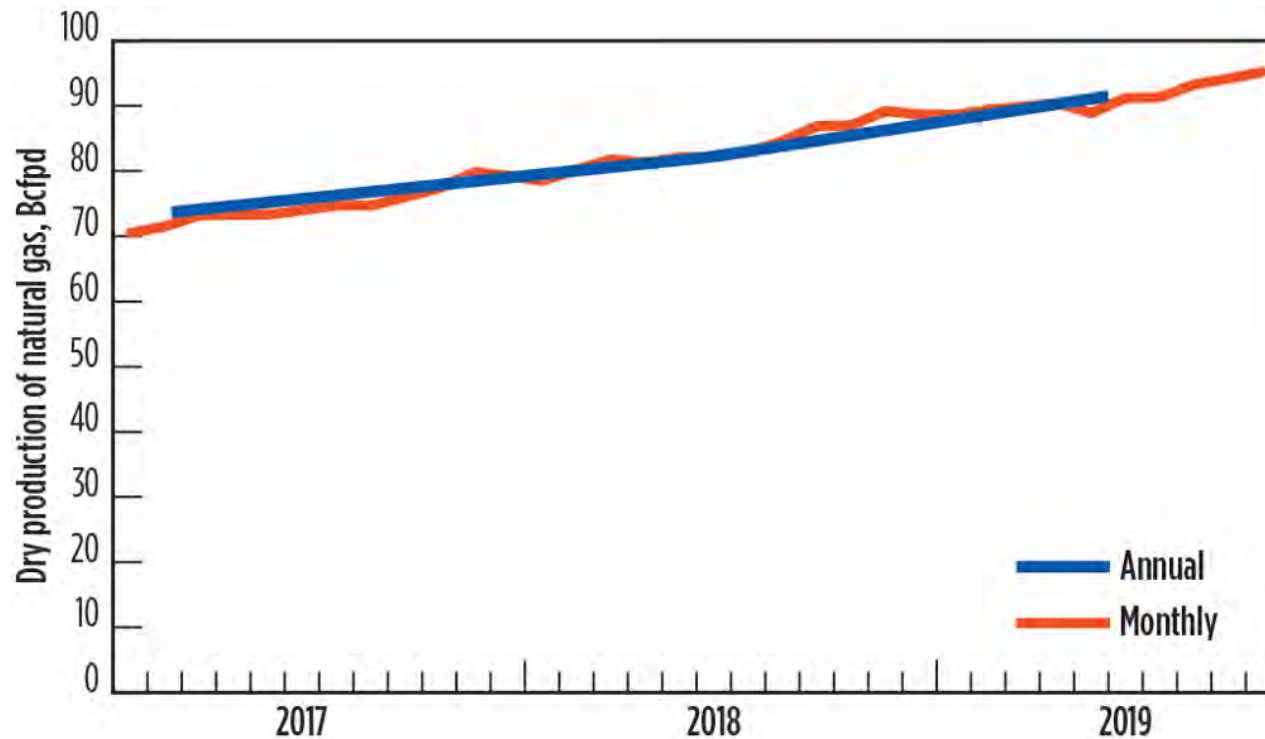
Sources: World Oil, U.S. EIA

U.S. Crude Oil Production



Source: API

Natural Gas Production & Price



Price for 2020

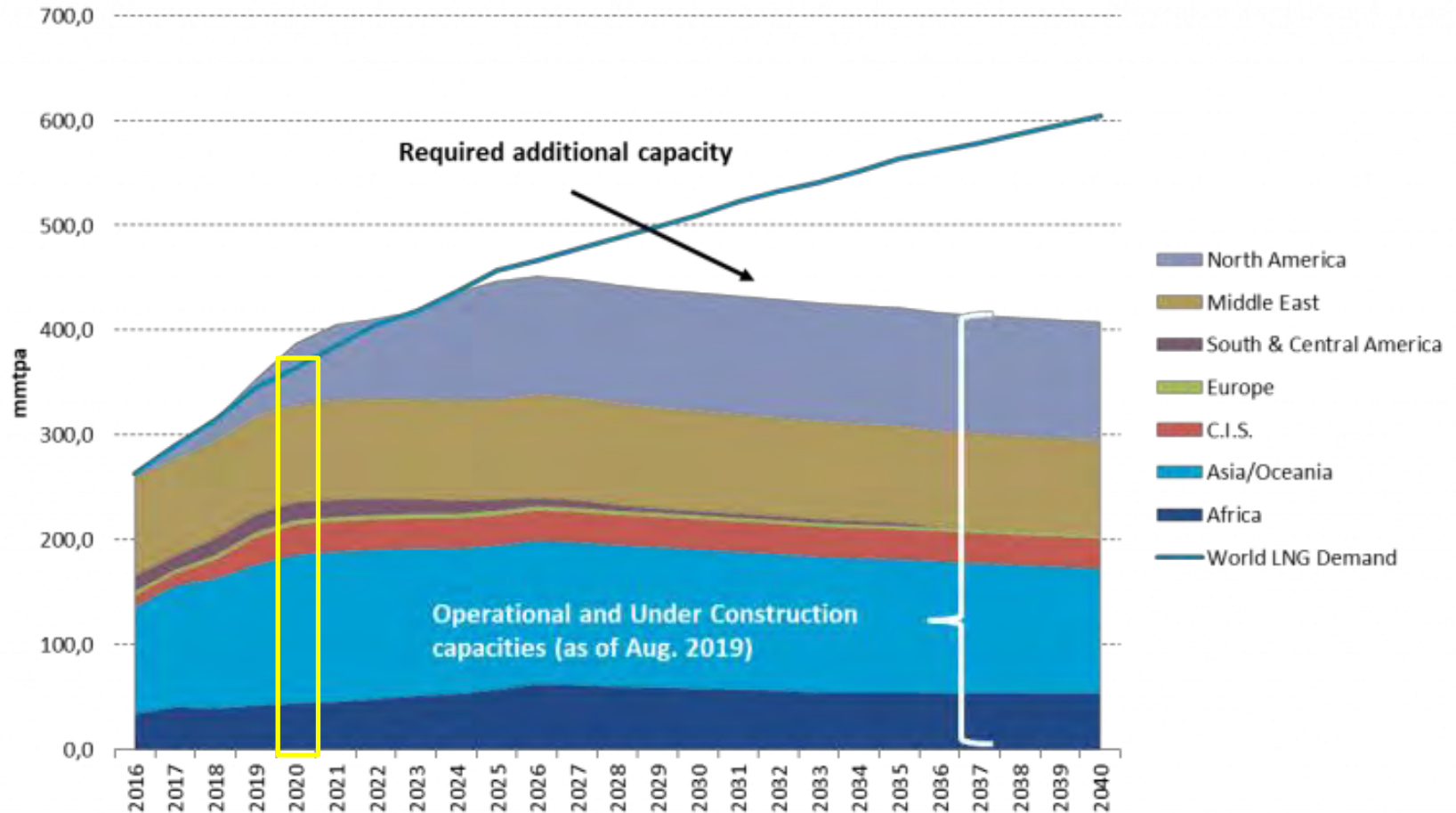
EIA:
\$2.33/MMbtu

World Oil:
\$2.15/MMbtu

Sources: U.S. EIA, Natural Gas Monthly (Dec. 2019), Short Term Outlook (2019)

Note: Data for October, November and December 2019 based on Short-Term Energy Outlook Projections

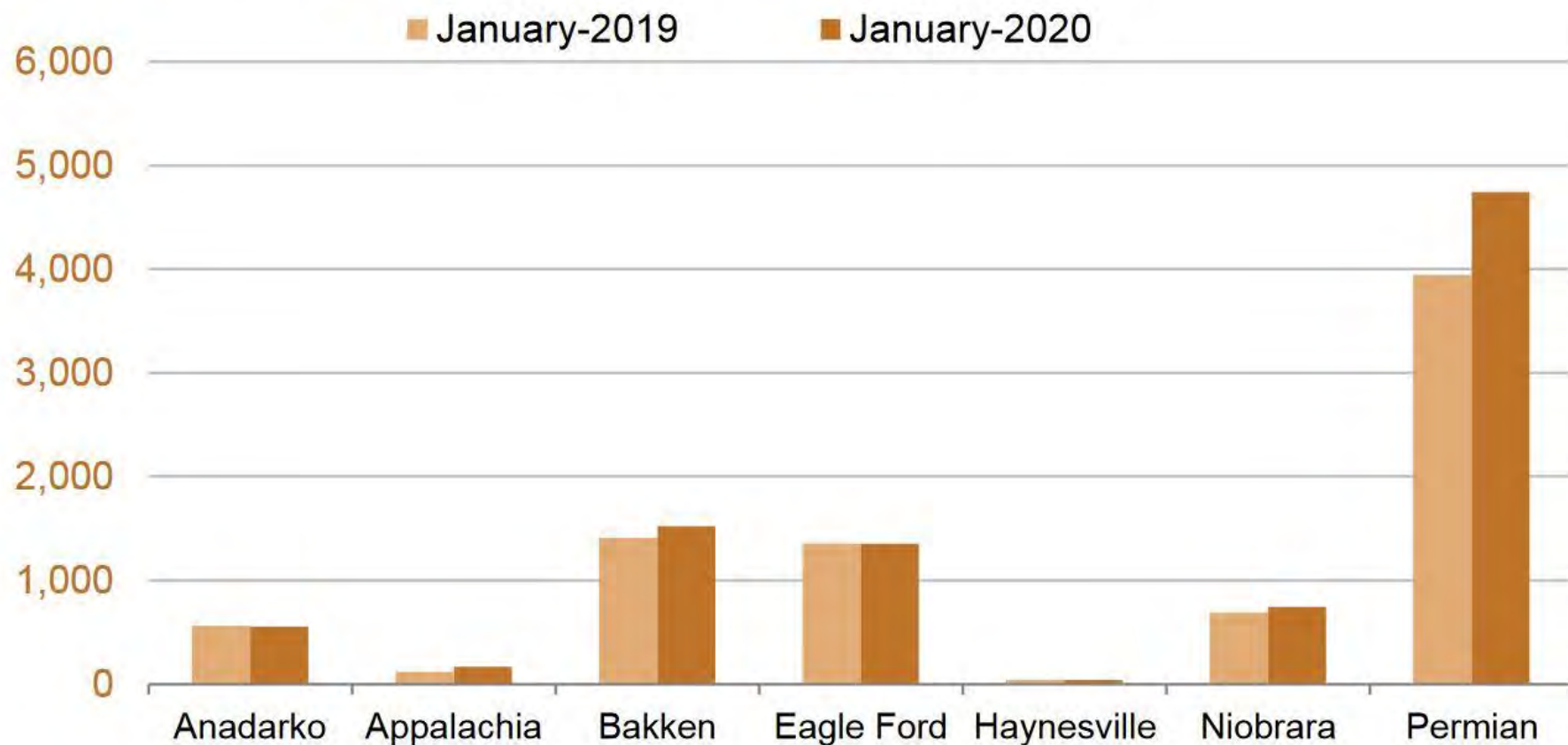
Global LNG Growth



Source: Cedigaz

U.S. Oil Production Sources

Oil production
thousand barrels/day

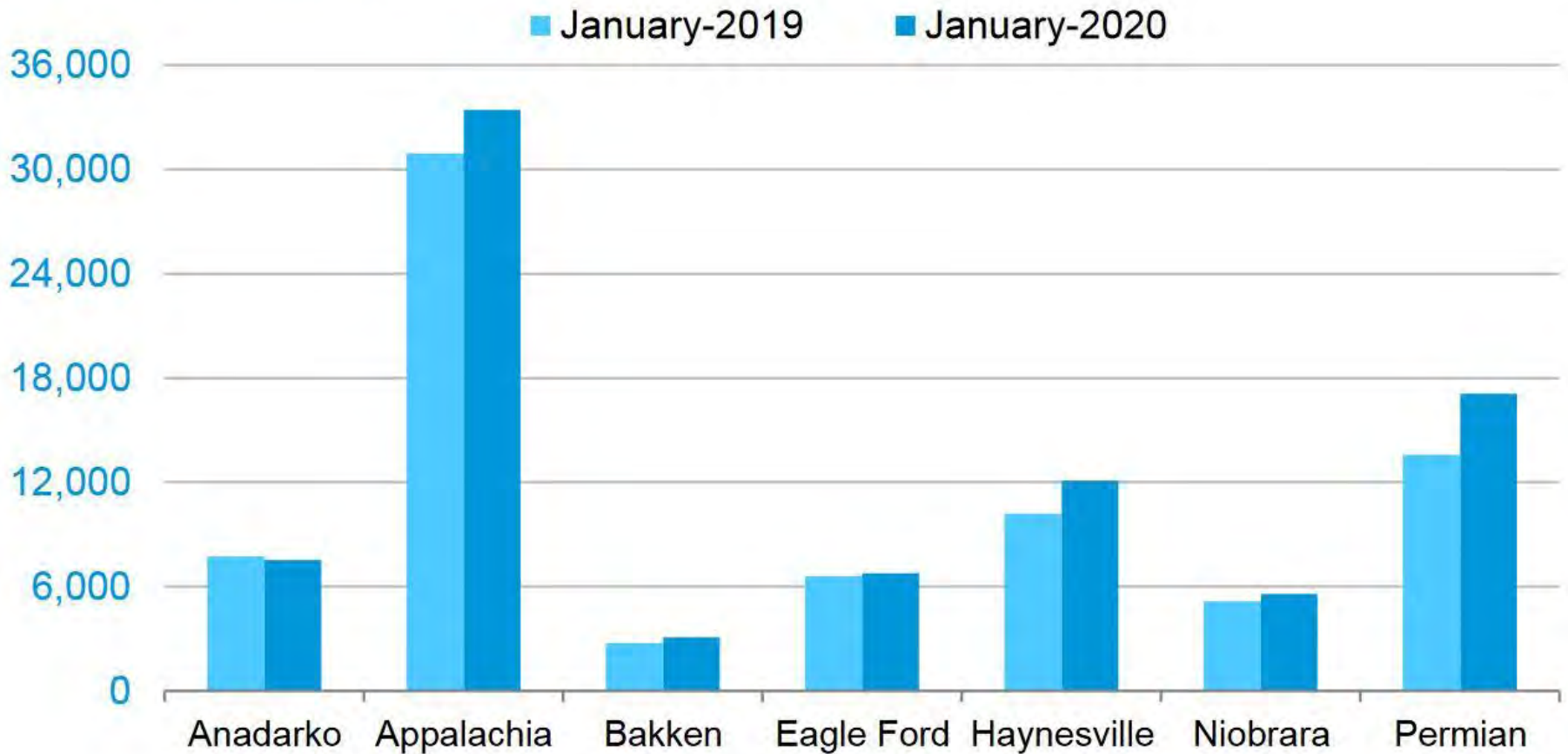


Source: EIA

U.S. Gas Production Sources

Natural gas production

million cubic feet/day



Source: EIA

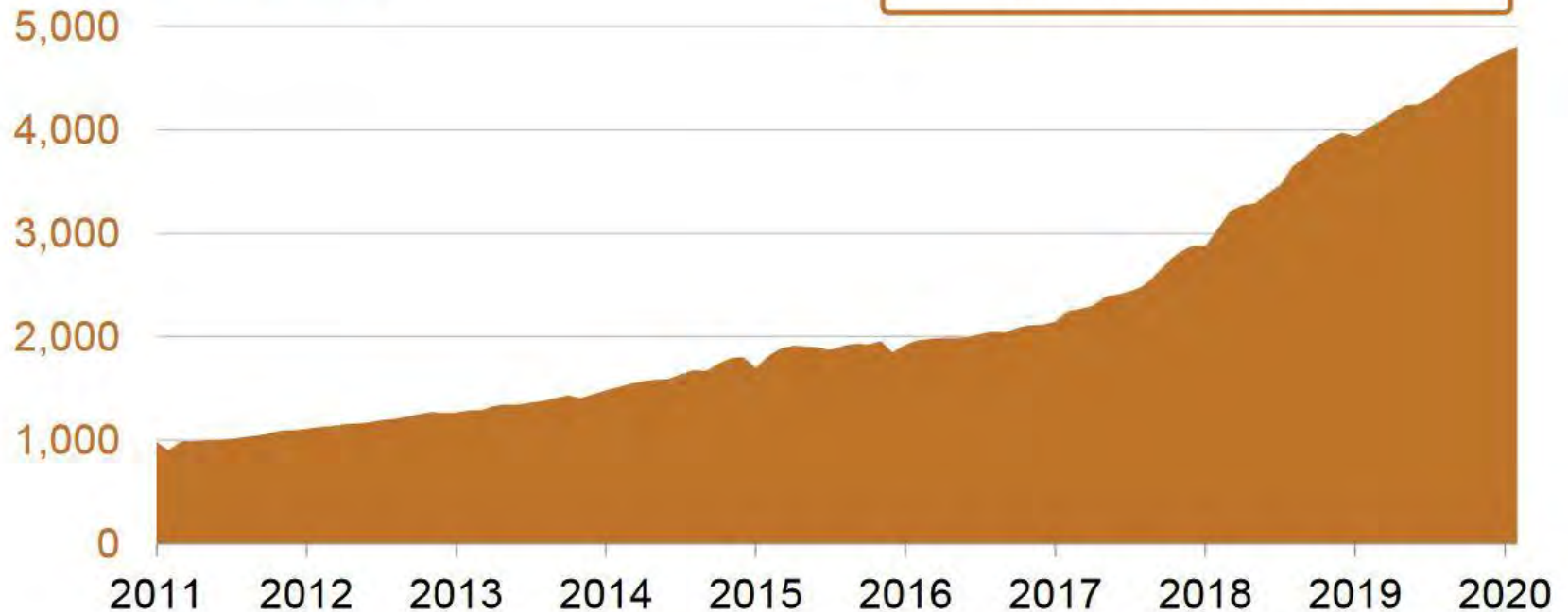
Permian Basin Oil Production

Permian Region Oil production

thousand barrels/day

Oil +45

thousand barrels/day
month over month

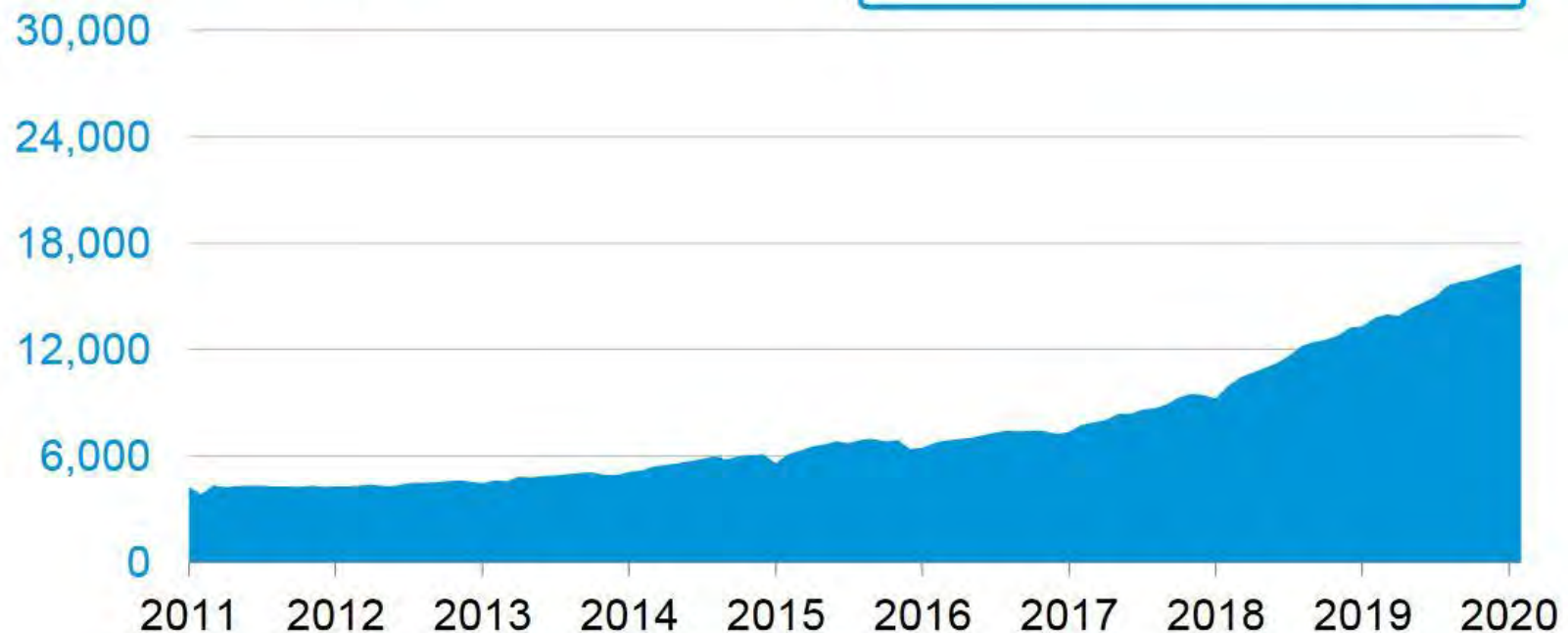


Source: EIA

Permian Basin Gas Production

Permian Region Natural gas production

million cubic feet/day



Gas +205
million cubic feet/day
month over month



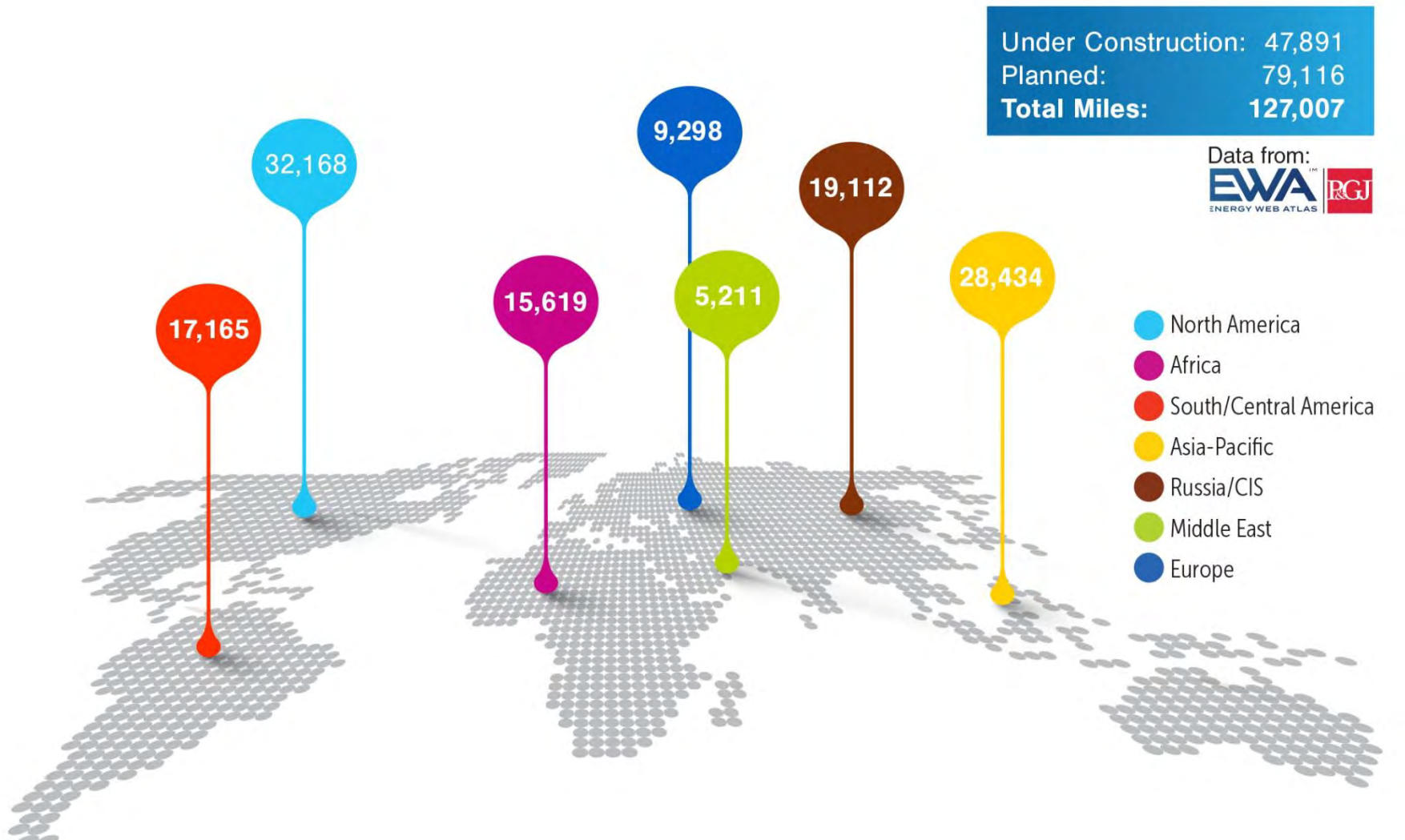
Source: EIA



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GLOBAL DEMAND

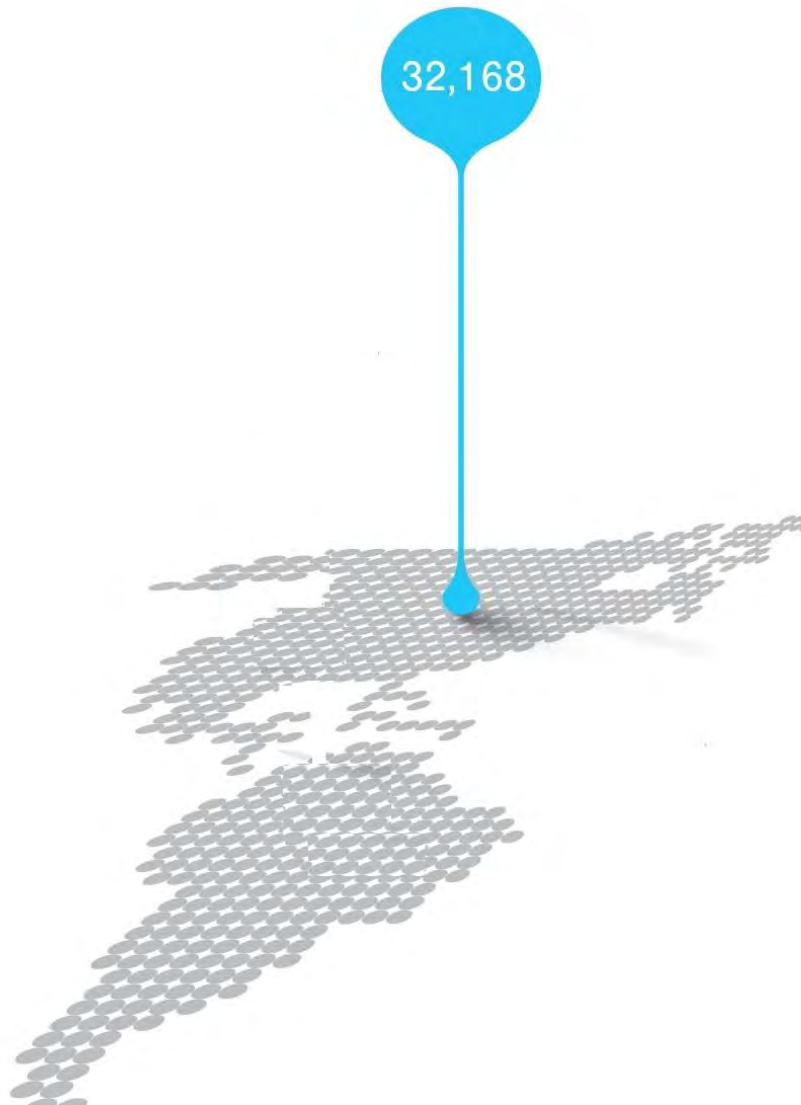
Global Pipeline Construction



Source: P&GJ / Energy Web Atlas

Global Pipeline Construction

North America



Pipeline Miles Under Construction: **8,076**

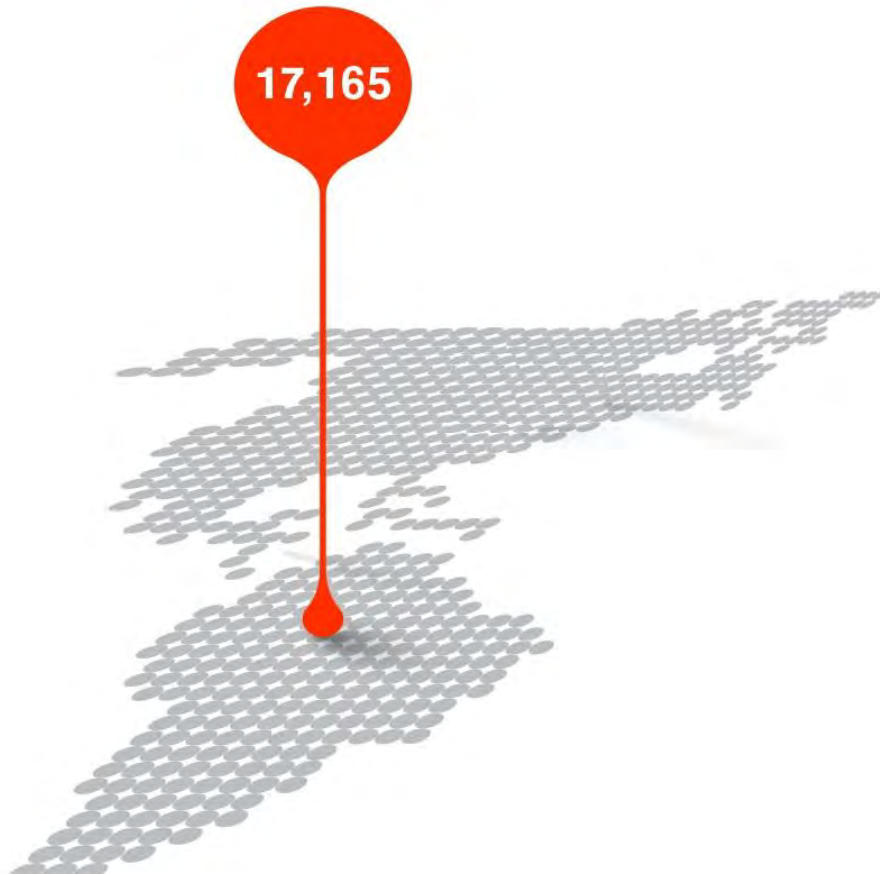
Pipeline Miles Planned: **26,092**

Total: **32,168**

Source: P&GJ / Energy Web Atlas

Global Pipeline Construction

South America



Pipeline Miles Under Construction: **4,412**

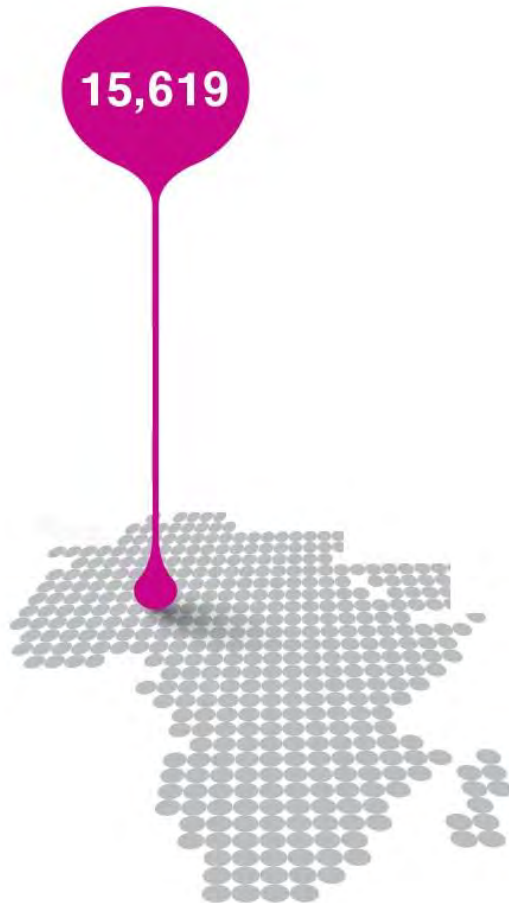
Pipeline Miles Planned: **12,753**

Total: **17,165**

Source: P&GJ / Energy Web Atlas

Global Pipeline Construction

Africa



Pipeline Miles Under Construction: **2,687**

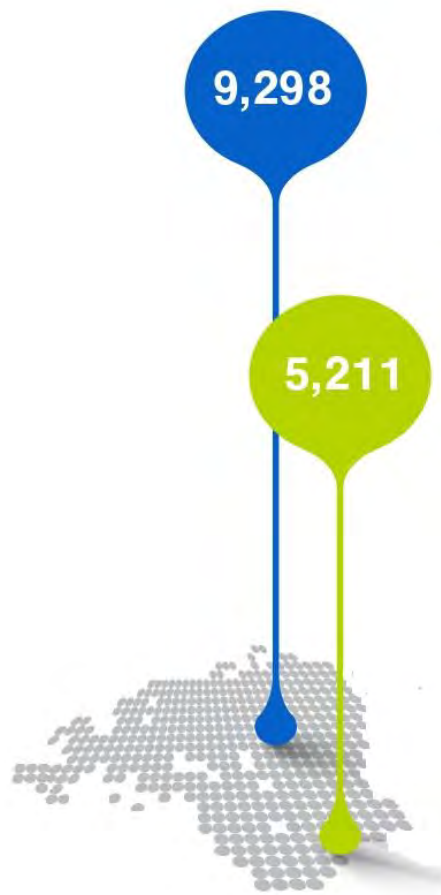
Pipeline Miles Planned: **12,932**

Total: **15,619**

Source: P&GJ / Energy Web Atlas

Global Pipeline Construction

Europe / Middle East



Pipeline Miles Under Construction: **4,292**

Pipeline Miles Planned: **5,006**

Total: **9,298**

Pipeline Miles Under Construction: **1,302**

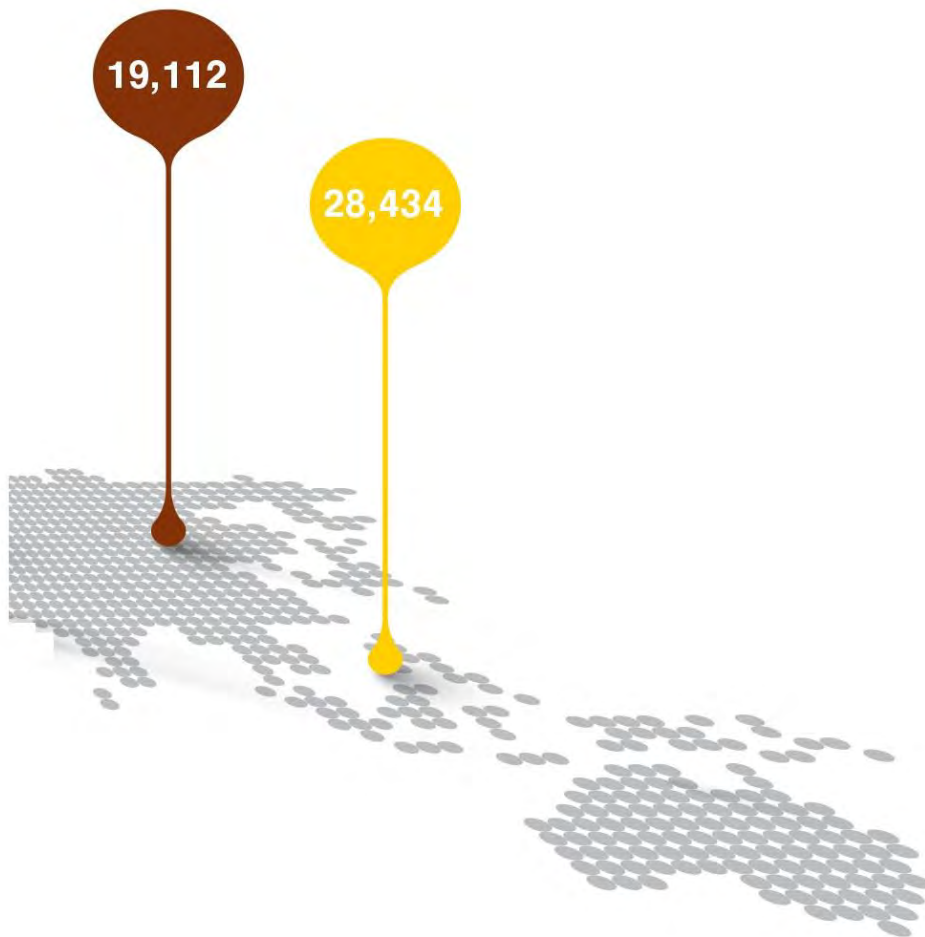
Pipeline Miles Planned: **3,909**

Total: **5,211**

Source: P&GJ / Energy Web Atlas

Global Pipeline Construction

Russia-CIS / Asia-Pacific



Pipeline Miles Under Construction: **11,385**

Pipeline Miles Planned: **7,727**

Total: **19,112**

Pipeline Miles Under Construction: **15,737**

Pipeline Miles Planned: **12,697**

Total: **28,434**

Source: P&GJ / Energy Web Atlas

A large red crawler crane is lifting a massive, dark-colored pipe section. The pipe is being hoisted by a thick cable. Two workers in safety gear are visible near the base of the pipe. The scene is set outdoors with a clear blue sky and some trees in the background.

Regional Construction

CRUDE OIL PIPELINES

Major Capacity Additions (Completed)

2017

Midland to Sealy

575,000 bpd

Enterprise Products

2018

Sunrise Expansion

500,000 bpd

Plains All American

2019

Cactus II

670,000 bpd

Plains All American

EPIC Crude

900,000 bpd

EPIC

Gray Oak

900,000 bpd

Phillips 66

Breaking the Bottleneck

Midland-to-Sealy
Enterprise Products

Sunrise
Plains All American

Seminole-Red
Enterprise Products

Permian Express 4
Energy Transfer

Cactus II
Plains All American

EPIC Crude
EPIC Midstream

Gray Oak
Phillips 66 Partners

bpd

575,000

500,000

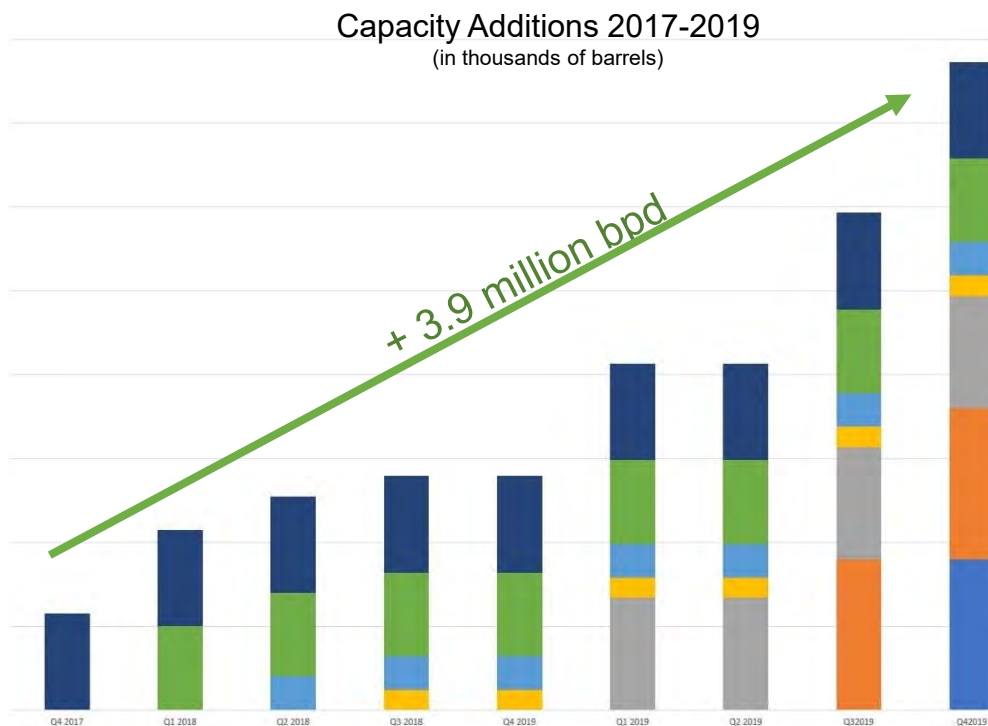
200,000

120,000

670,000

900,000

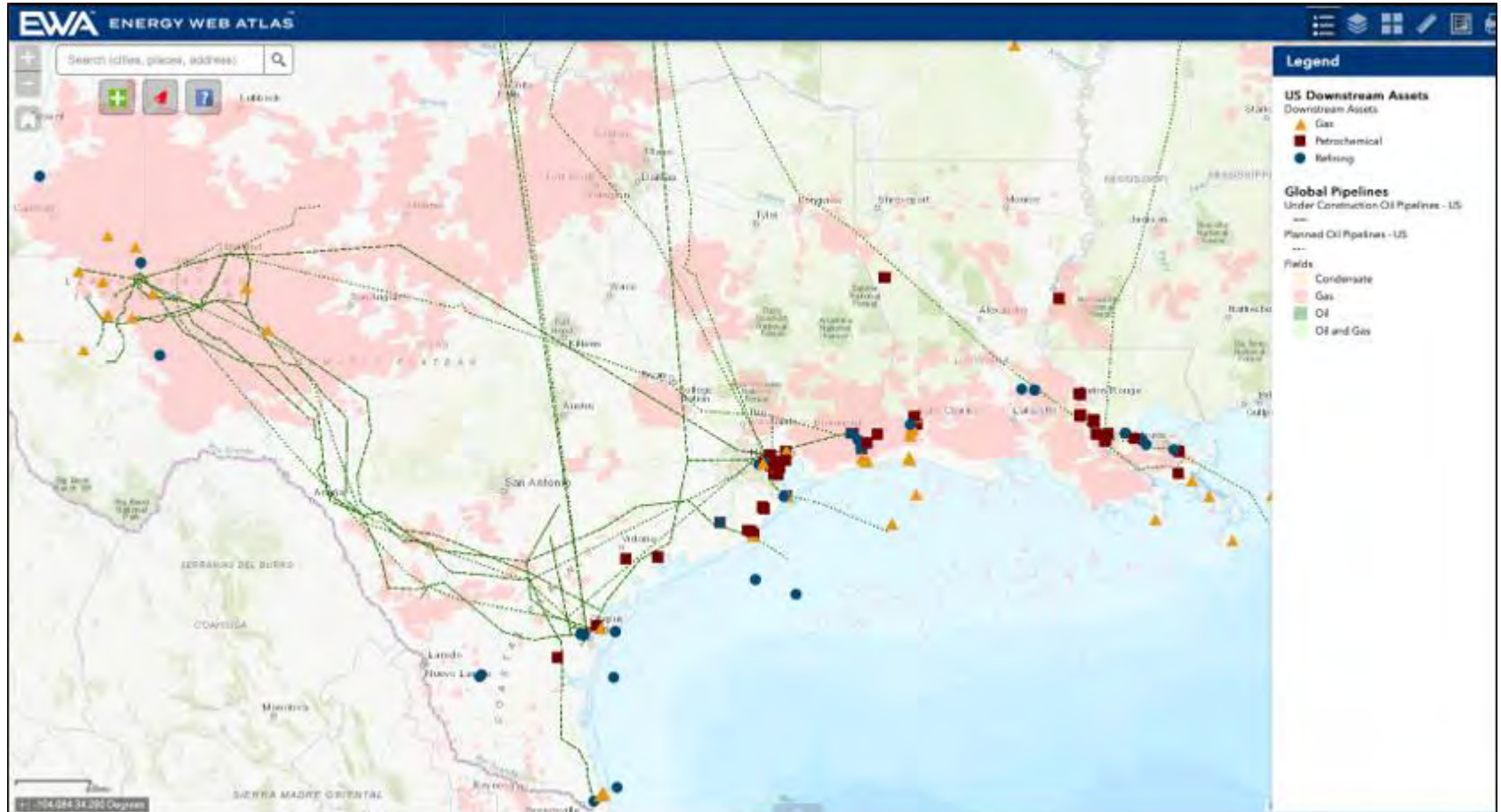
900,000



Source: Pipeline & Gas Journal, Corporate Reports

Planned and Under Construction

Crude Oil Pipelines



Major Capacity Additions (Planned Completion 2020-21)

2020

Jupiter

1 MMbpd

Jupiter Energy

2021

Red Oak

400,000 bpd

Phillips 66 (*Permian & Cushing*)

Wink to Webster

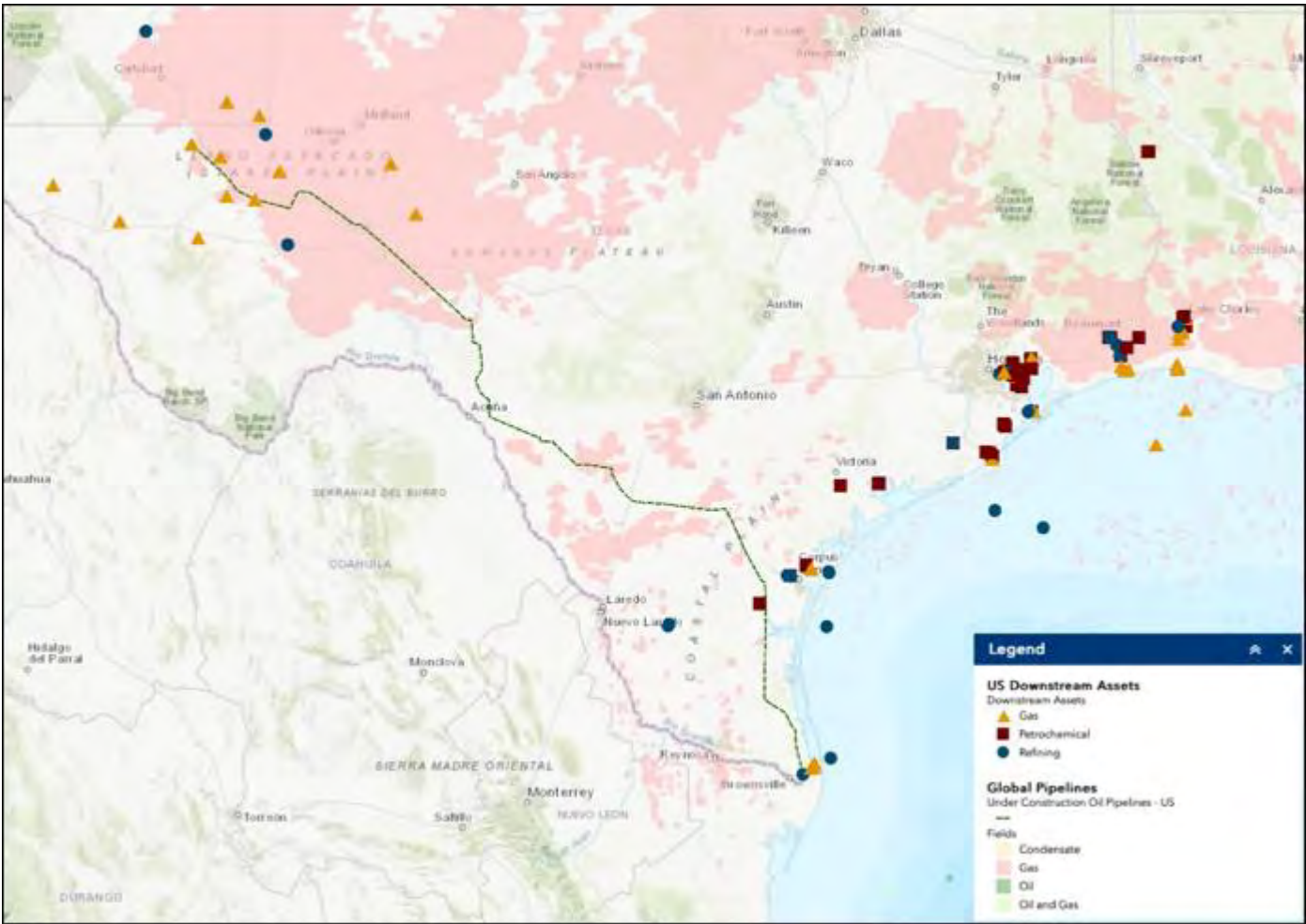
1 MMbpd

Exxon, Plains, Lotus, MPLX,
Delek, Rattler

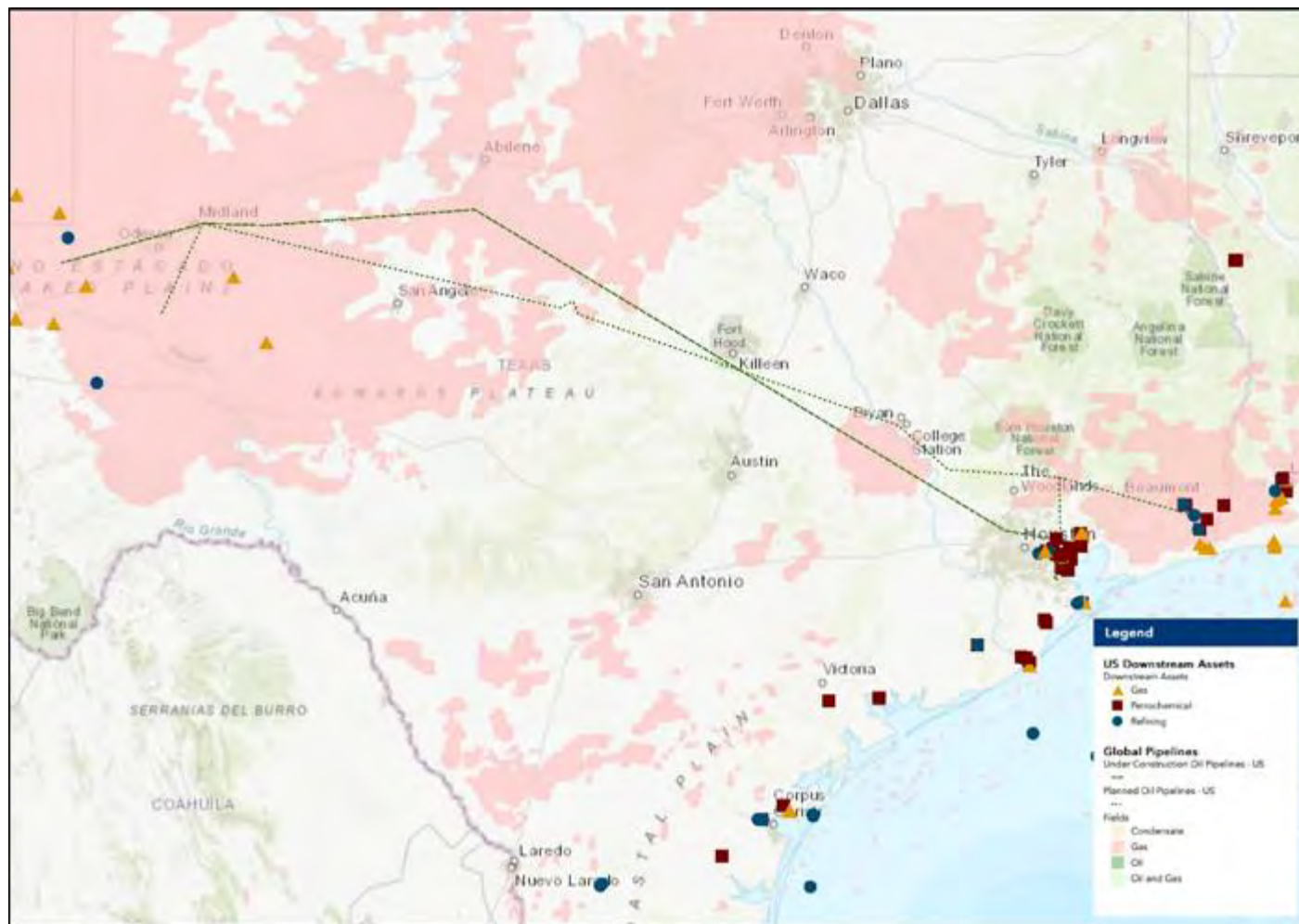
Total

2.4 MMbpd

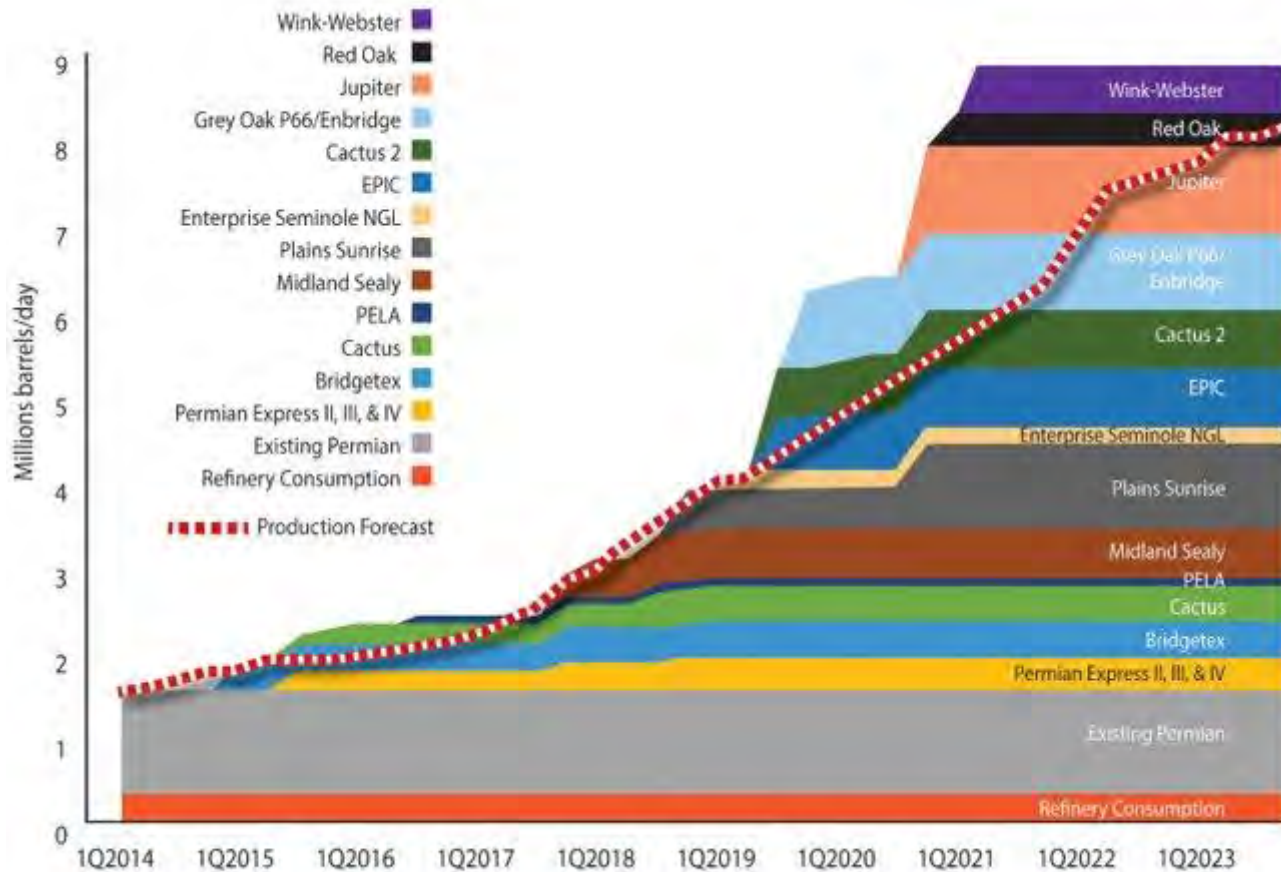
Jupiter Oil Pipeline



Wink to Webster Oil Pipeline



Permian Basin Crude Takeaway Capacity



SOURCE: Pipeline & Gas Journal, Morningstar, and Corporate Reports

A photograph of industrial gas pipelines at sunset. The foreground shows several large, parallel metal pipes with blue support brackets. In the background, there are industrial structures like distillation columns and trees, all silhouetted against a warm, orange-hued sky.

Regional Construction

NATURAL GAS PIPELINES

Major Gas Capacity Additions

2019

Gulf Coast Express

2 Bcf/d

Kinder Morgan

2020

Permian Highway

2 Bcf/d

Kinder Morgan,
EagleClaw

2021

Whistler

2 Bcf/d

MPLX, WhiteWater

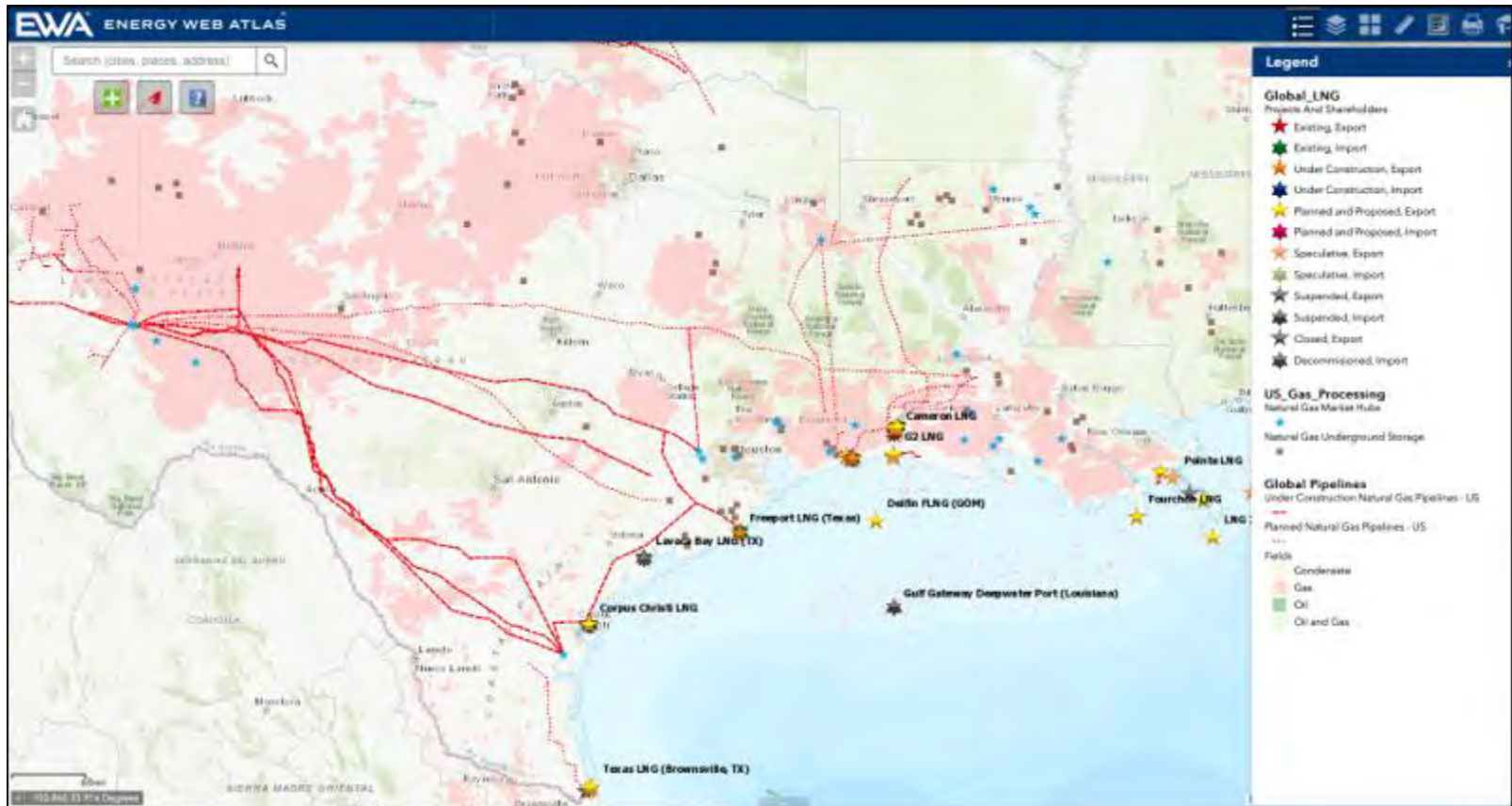
2023

Permian Global Access

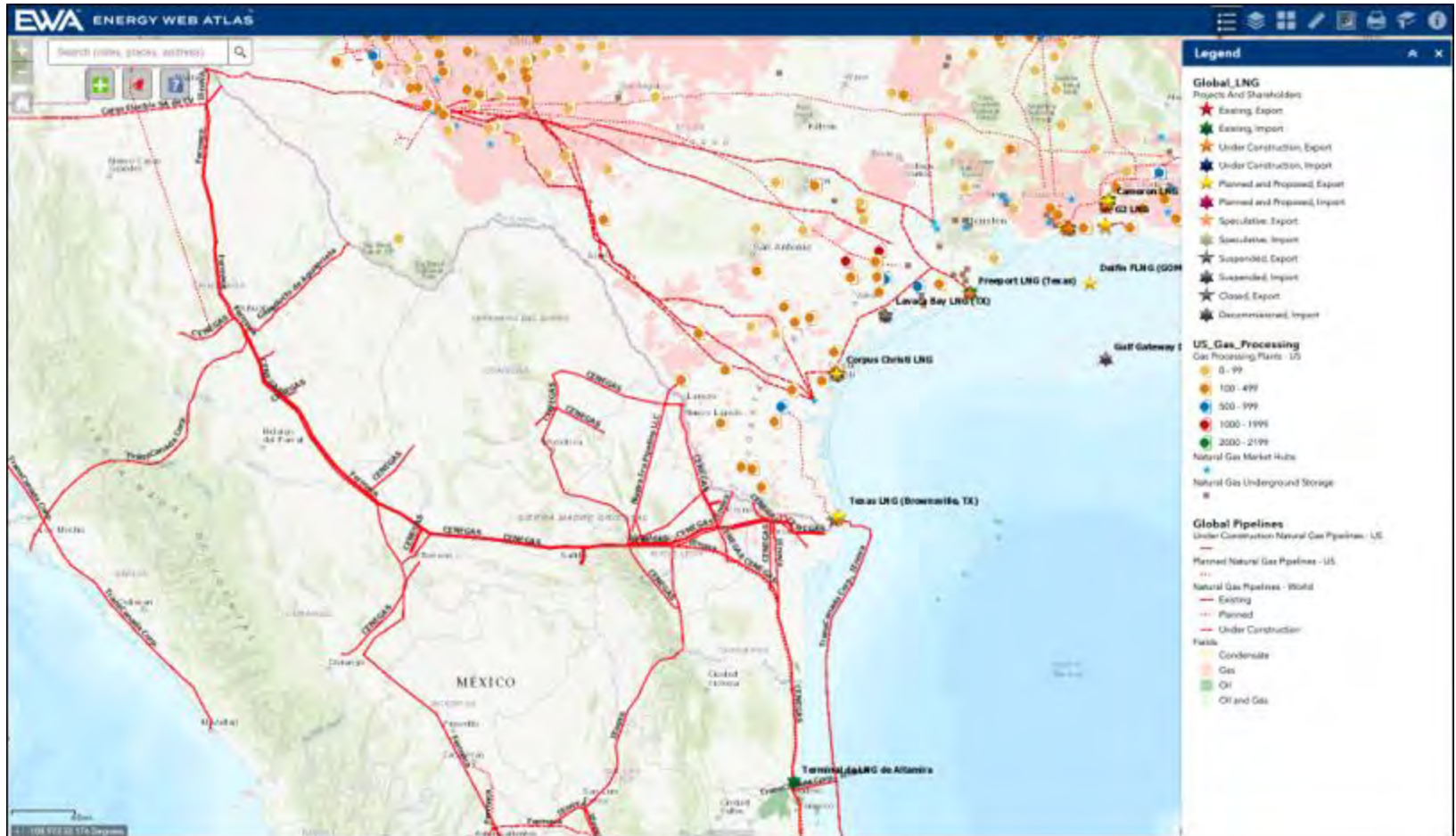
2 Bcf/d

Tellurian

Planned and Under Construction Natural Gas Pipelines



Dry Gas Export Pipelines (to Mexico)

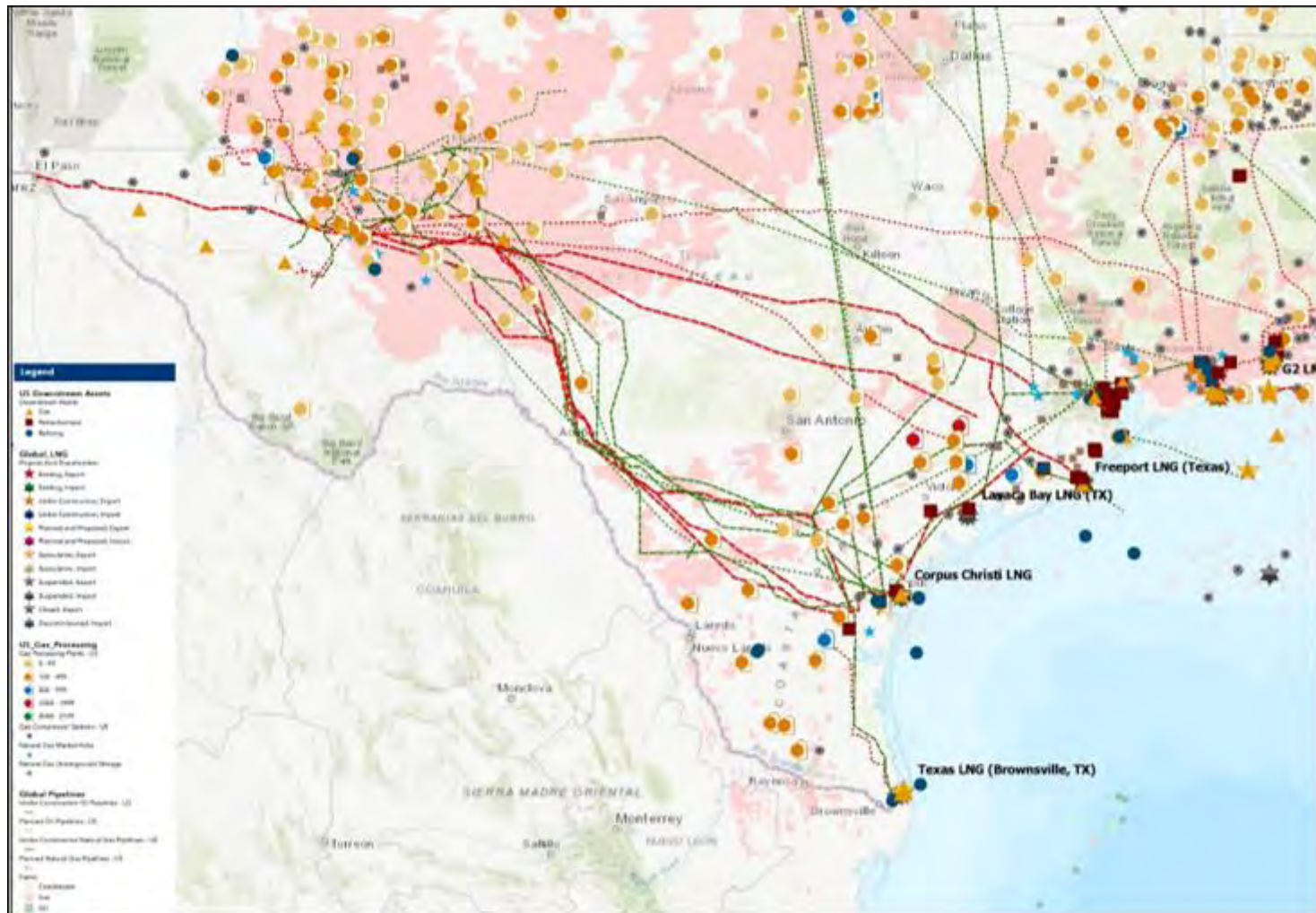


An aerial photograph showing a large green ship docked at a pier. The pier is equipped with numerous pipes and infrastructure, likely for a port or industrial facility. The water is a deep teal color. The ship is positioned vertically in the center of the frame, with its bow pointing towards the top. The pier extends horizontally from the ship, with many pipes running along its length. The background shows more of the pier and the surrounding water.

Regional Construction

EXPORT INFRASTRUCTURE

Export Infrastructure



Crude Export Terminals

Planned & Under Construction

Corpus Christi

Six Terminals through 2023

2019

Eagle Ford Terminal	960,000 bpd	Enterprise Products, Plains
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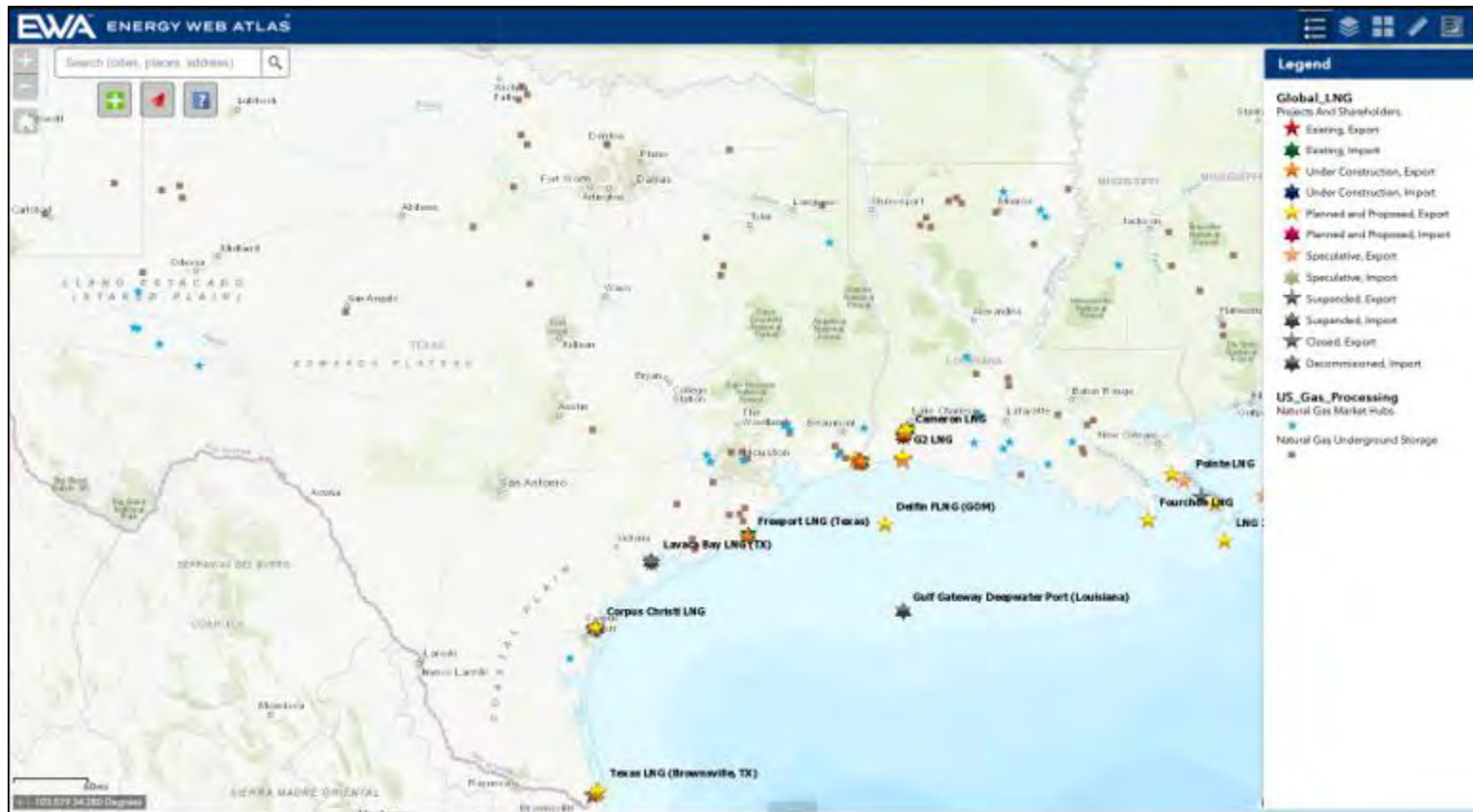
2020

South Texas Terminal	154,000 bpd	EPIC/CCI
South Texas Gateway	800,000 bpd	Buckeye, Phillips 66, MPLX

2023

Harbor Island	1.4 MM bpd	Port of Corpus Christi/Carlyle
Texas Gulf Terminal	500,000 bpd	Trafigura
Bluewater Texas	1.9 MM bpd	Phillips 66

LNG Terminals Planned and Under Construction





Pipeline & Gas Journal

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3 March 2020
Westin Galleria
Houston



2 June 2020
World Trade Center
Rotterdam,
The Netherlands