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# Gulf Coast Crude Exports to Europe and Asia Drive 2018 Growth

## Houston-area shipments top 700 mb/d.

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### Morningstar Commodities Research

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### Data Sources for This Publication

U.S. Energy Information Administration

U.S. Customs

To discover more about the data sources used, [click here](#).

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### Exports Triple Since 2016

Earlier this month U.S. Customs released crude export data through December 2018. In the three years since regulations preventing most exports except to Canada were lifted in December 2015, the U.S. became a major crude exporter and is now breathing down the neck of leaders Russia and Saudi Arabia. Last year, exports averaged 2.0 million barrels/day, up 73% over the 1.16 mmb/d average in 2017 and more than triple the 0.6 mmb/d shipped in 2016. The trend is expected to continue. On March 11, the International Energy Agency released its latest Annual Outlook for Global Oil Markets predicting the U.S. will double its gross crude oil exports to 4.2 mmb/d by 2024. This note looks at the origin and destination of U.S. crude exports in 2018 as well as progress on plans to expand dock capacity to meet future growth.

### Evolving Market

We provided a preliminary analysis of 2018 U.S. exports (through October) in our January review of the U.S. crude market (see "[Final Quarter Supply Doubts Mar Record Year](#)"). Continuing export growth is underpinned by record U.S. crude production that hit 12 mmb/d at the beginning of March 2019 according to weekly data from the Energy Information Administration and is expected to average 12.3 mmb/d in 2019 and 13.3 mmb/d in 2020 according to EIA's March 2019 Short Term Energy Outlook. Most new production comes from shale basins like the Permian, where crude output is predominantly light and sweet grades such as West Texas Intermediate that are not currently required by Gulf Coast refineries configured to process heavier imported barrels. Surplus output is therefore headed to export docks where international buyers have jumped on grades like WTI that are priced competitively against rival grades like North Sea Brent. Exports are expected to continue growing with new production and a wave of pipeline projects set to deliver crude to the Texas and Louisiana Gulf Coasts (see our December 2018 note: "[Pipeline Plans Suggest Tsunami of Crude Exports](#)"). The evolving export market has transformed crude pricing at the Gulf Coast and prompted the creation of new futures contracts based on Houston WTI last October (see "[Houston We Need A Contract](#)").

### Shipped From?

According to the latest monthly U.S. Customs data, 91% of 2018 crude exports or an average 1.8 mmb/d were shipped out from the Petroleum Administrative District for Defense III region (the Gulf Coast). Most of the rest goes overland to Canada. Note that Canada exports 3-4 mmb/d of crude to the U.S. — mostly heavy crude sent by pipeline to the Midwest, but it also imports smaller volumes of light crude from its southern neighbor.

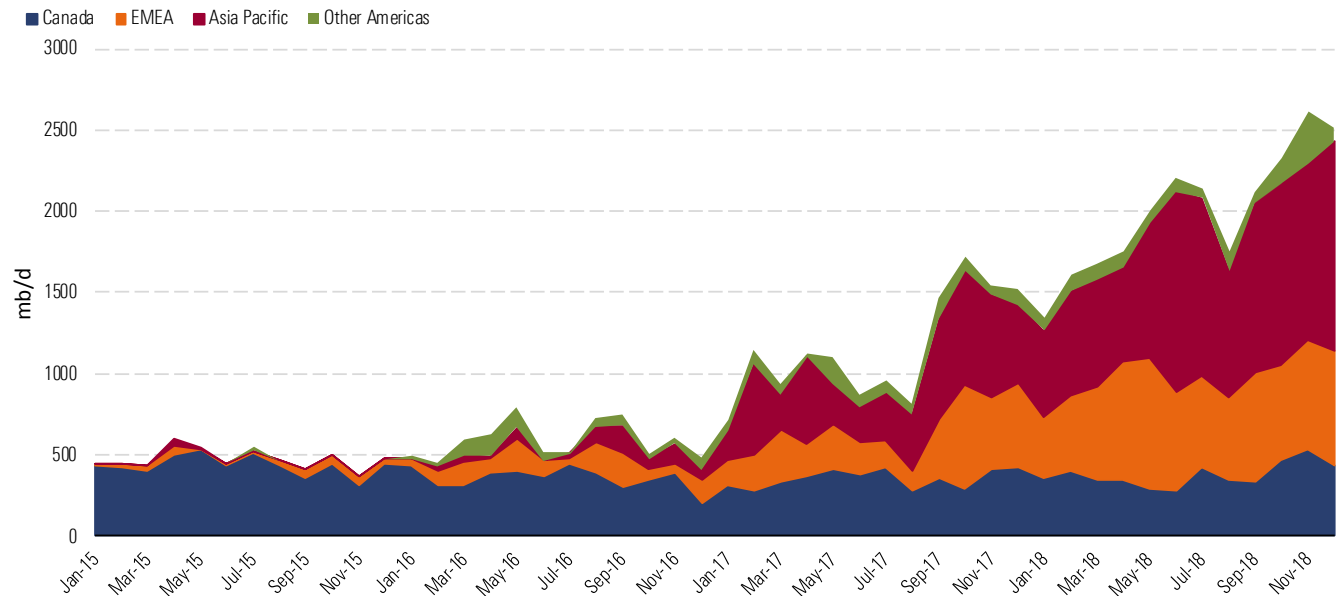
Gross crude exports from the U.S. to Canada averaged 378 mb/d in 2018 with 204 mb/d or 54% of that volume leaving from PADD III. These include condensate crude shipped north by pipeline from the Gulf Coast that is used as diluent for blending with heavy Canadian bitumen to reduce its viscosity. Another 149 mb/d or 39% of exports to Canada in 2018 came from North Dakota shale, and 25 mb/d from the East Coast, including crude by rail through New York State. The smallest U.S. crude export region is the Pacific Northwest and Alaska that shipped just 11 mb/d in 2018.

### **Houston Leaps Ahead**

In 2018 the Houston region (Houston Ship Channel, Freeport, Texas City, and Galveston) leapt ahead of the rest of the Gulf Coast in terms of crude exports with an annual average 706 mb/d—a 38% share of the 1.8 mmb/d leaving PADD III. Bear in mind that some of these shipments are pipeline diluent going to Canada that we described above, but the Houston-area tally was up more than threefold over 2017 when the region shipped 225 mb/d or 22% of the 945 mb/d Gulf Coast total. This surge in regional exports propelled Houston ahead of Corpus Christi in 2018 with the latter's tally only growing from an average 303 mb/d in 2017 to 441 mb/d last year and falling in percentage terms from a leading 35% of Gulf Coast shipments in 2017 to 24% in 2018. The Beaumont/Port Arthur region on the Texas-Louisiana border also saw a big increase in export volumes from an average 259 mb/d in 2017 to 457 mb/d in 2018, maintaining the area's 24% Gulf Coast share from 2017. Crude exports from Louisiana and Mississippi showed lower growth than other regions—increasing in volume terms to 248 mb/d in 2018 from 148 mb/d in 2017 but dropping from 19% of the Gulf Coast tally in 2017 to 13% last year. Lower growth in exports from the eastern Gulf reflect limited pipeline capacity delivering shale barrels to that region (see our February note: "[Louisiana Bound - New Crude Routes From the Midwest](#)").

### **Where in the World?**

Exhibit 1 breaks down total crude exports by major destination region between January 2015 and December 2018. During 2015 when exports were only permitted to Canada except in special circumstances, an annual average 435 mb/d or 92% were shipped to Canadian refineries (blue shaded area), while just 30 mb/d went to Europe, the Middle East, and Africa (orange shading). In 2016 Canadian dominance dropped to 61% or an average 357 mb/d, EMEA shipments increased to 112 mb/d, and Asia-Pacific (red shading) to 58 mb/d with another 59 mb/d going to the Americas excluding Canada (green shading). Because of the oil price collapse and subsequent slowdown in U.S. production during 2015 and 2016, exports really didn't take off until 2017, when Canada's haul was reduced to 30% of the total and they were overtaken by Asia-Pacific countries that took in 36% of U.S. shipments. EMEA came third in 2017 with 304 mb/d or 26% of the total, leaving 7% for the rest of the Americas. Exports to Asia then more than doubled between 2017 and 2018 to 907 mb/d that represented 45% of the 2 mmb/d total. EMEA came second in 2018 with 30% of the total but still doubled the tally over 2017 by taking 608 mb/d. Canada's share of 2018 exports dropped to just 19% but was up in volume terms over 2016 and 2017 to an average 378 mb/d. The rest of the Americas took 5% or 110 mb/d in 2018.

**Exhibit 2** U.S. Crude Exports by Destination Region 2015-18

Source: U.S. Customs, Morningstar.

**Destination Breakdown**

Exhibit 2 shows annual average volumes in mb/d within EMEA broken down by sub-region into Northwest Europe, Central Europe, the Mediterranean, the Middle East, and Africa. The data shows exports after 2015 were significant to Northwest Europe (with the U.K. and Netherlands being the most popular destinations). The Mediterranean became a more significant destination during 2017 and 2018. Middle East exports have been limited as might be expected for an oil rich region, and the smaller African market reflected that region's high output of light sweet crude competing directly with shale barrels.

**Exhibit 2** Exports to Europe, Middle East, and Africa 2015-18 (mb/d)

	Northwest Europe	Central Europe	Mediterranean	Mideast	Africa
2015	7	13	12	0	0
2016	61	15	31	2	3
2017	224	5	73	3	1
2018	394	23	156	31	6

Source: U.S. Customs, Morningstar.

Exhibit 3 shows the annual Asia-Pacific breakdown by country since 2015. China and Hong Kong combined took 55% of the region's U.S. crude deliveries in 2017 with South Korea taking 13% and Japan and India 6% each. In 2018 China and Hong Kong took slightly more than 2017 on a volume basis, but their share of the Asia total fell to 26%, which was level with South Korea. Japan kept its 6% share in 2018 but India increased U.S. purchases to 14% of Asia's share or 131 mb/d. The 2018 annual number disguises China's changing purchase pattern during the year where it was the lead buyer in Asia through July before it stopped all together until December in response to the threat of U.S. trade sanctions. After China stopped buying, South Korea stepped up to the plate and finished the year with a 43% share of Asian purchases in December. Taiwan also increased purchases from the U.S. in the second half of 2018 to 13% of the Asian haul.

**Exhibit 3** Exports to Asia 2015-18 (mb/d)

	<b>China &amp; Hong Kong</b>	<b>South Korea</b>	<b>Japan</b>	<b>India</b>	<b>Taiwan</b>	<b>Thailand</b>	<b>Singapore</b>	<b>Other</b>
2015	1	3	0	1	0	0	0	0
2016	22	11	8	0	0	3	14	2
2017	232	56	26	27	13	16	26	24
2018	236	235	64	131	122	40	64	21

Source: U.S. Customs, Morningstar.

### **Future Markets**

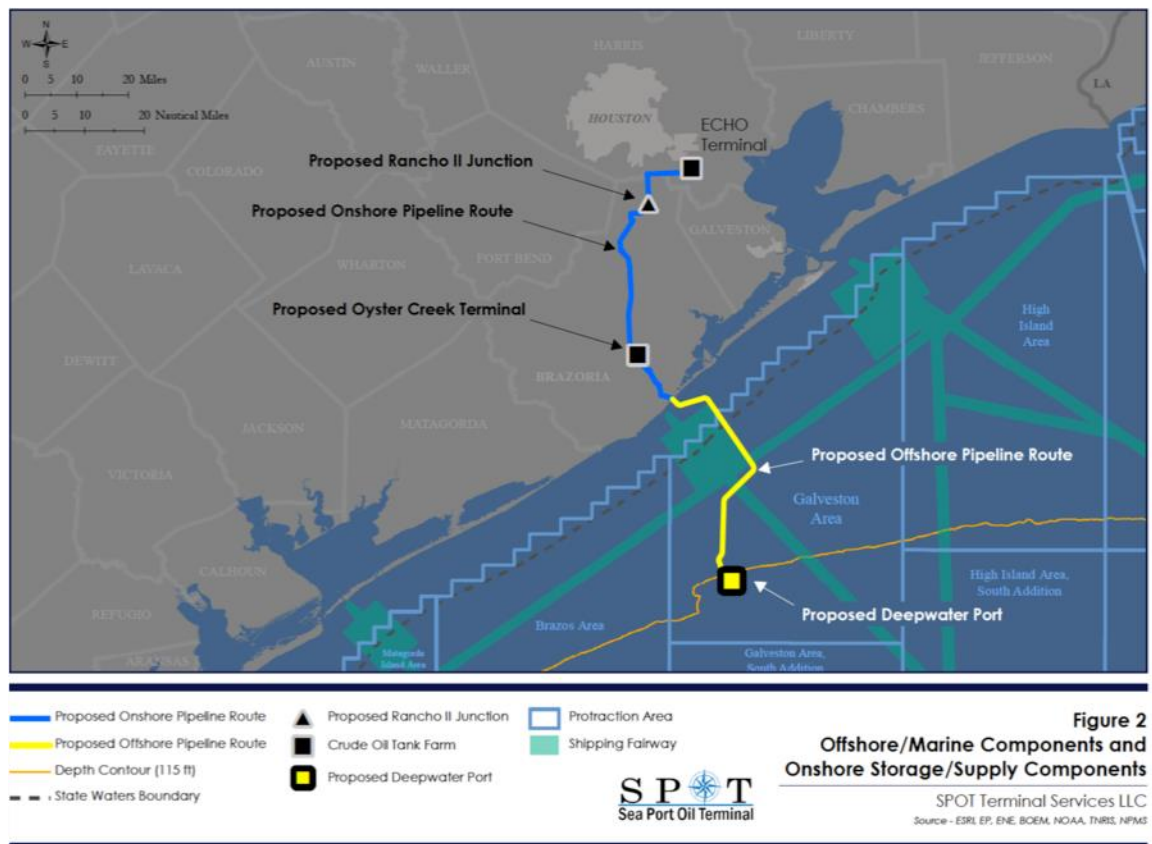
We expect China to resume significant purchases in 2019 once its trade dispute with the U.S. is resolved. Big increases by Indian and Taiwanese purchases in the second half of 2018 indicate their future promise as growth markets for U.S. crude. Expected increases in refinery capacity in Asia over the next several years represent opportunities for U.S. producers to increase their market share. The European and Mediterranean markets showed great promise in 2018 but we believe continued growth there depends on the response of competitors in Africa and the Middle East that have lower delivery costs and can produce similar crude grades to U.S. shale. Production disruption due to geopolitical factors in Nigeria and Libya will increase opportunity for U.S. sales.

### **Barrels at the Dock**

In the meantime, plans continue to build larger and more efficient export terminals along the Gulf Coast. During the first week of March details of two applications submitted earlier this year were published by the U.S. Department of Transportation, Maritime Administration or MARAD. These are the Sea Port Oil Terminal, or SPOT, offshore deep-water terminal proposal from Enterprise Product Partners and the Texas Crude Oil Loading Terminal, or COLT, proposal by a joint venture between Enbridge Energy Partners, Kinder Morgan, and Oiltanking. Both projects include manned deep-water platforms and control centers located offshore that would in turn be attached to two single-point mooring buoys capable of loading 2 million barrel very large crude carriers (supertankers) in the Gulf of Mexico. The

SPOT platform would be in the Galveston Area Outer Continental Shelf lease block 463, approximately 30 nautical miles off the coast of Brazoria County, Texas, in a water depth of approximately 115 feet (Exhibit 4). The COLT platform would be located close by in Lease Block Brazos Area 466 at a depth of 110 feet. Both terminals will be fed via pipeline from storage tank farms on the Gulf Coast connected to multiple crude delivery pipelines in the Houston, Freeport, and Texas City area.

**Exhibit 4** Proposed Seaport Offshore Terminal



Source: Enterprise MARAD Permit Application

These permit applications follow one made by Trafigura for a similar installation off the coast of Corpus Christi, Texas, in August 2018 (see our September 2018 note: "[Corpus Christi Objects to Trafigura Offshore Terminal](#)"). In addition to the three VLCC permit applications already submitted to MARAD, five other deepwater terminal projects have been announced by midstream operators, including those by Port of Corpus Christi and Moda Midstream in the Corpus Christi outer harbor, Jupiter Midstream for offshore Brownsville, Texas, Tallgrass Energy offshore Louisiana, and Sentinel Midstream offshore Freeport, Texas. If all eight of these projects are completed, they would open at least 4 mm/d of incremental export capacity in the Gulf Coast region.

**Continued Growth**

U.S. crude export growth depends directly on production providing a flow of surplus barrels to Gulf Coast ports. In turn production relies on drilling economics in the shale basins and the offshore Gulf of Mexico. Underpinning both these pillars is crude price, which must stay in the \$50-\$60/barrel range to encourage new drilling and has to displace international competitors to find a home. The merry-go-round comes to a halt when world markets can't absorb U.S. production, pushing prices below breakeven rates in the shale basins and putting the brakes on new drilling. The limit to world appetite for U.S. crude is unknown today, but current midstream bets on export infrastructure assume it won't be reached soon. ■■

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