



ICE Midland WTI American Gulf Coast Futures

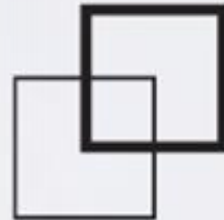
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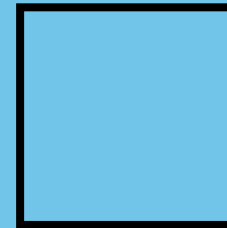
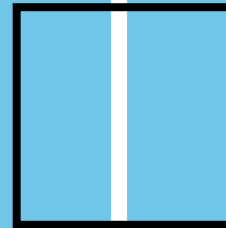
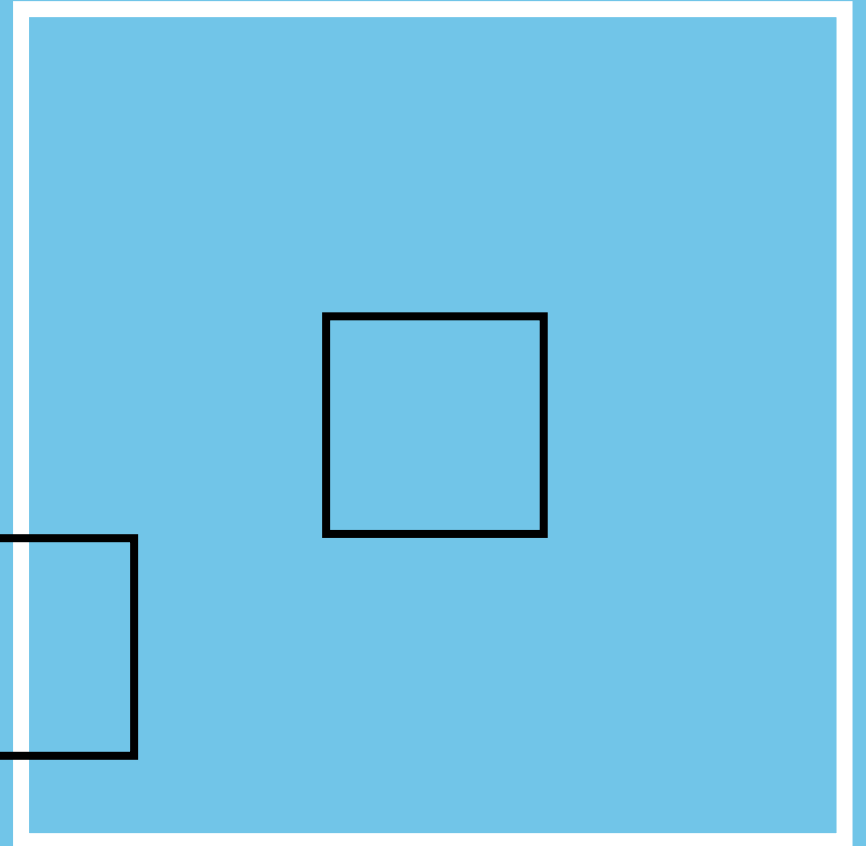
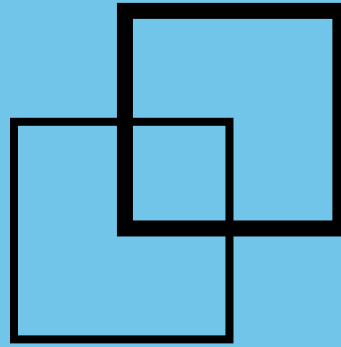
October 28, 2021



ICE Midland WTI American Gulf Coast (AGC) Futures

- Why is the USGC contract being re-developed?
- USGC crude fundamentals
- Features of the ICE Midland WTI American Gulf Coast crude oil futures contract

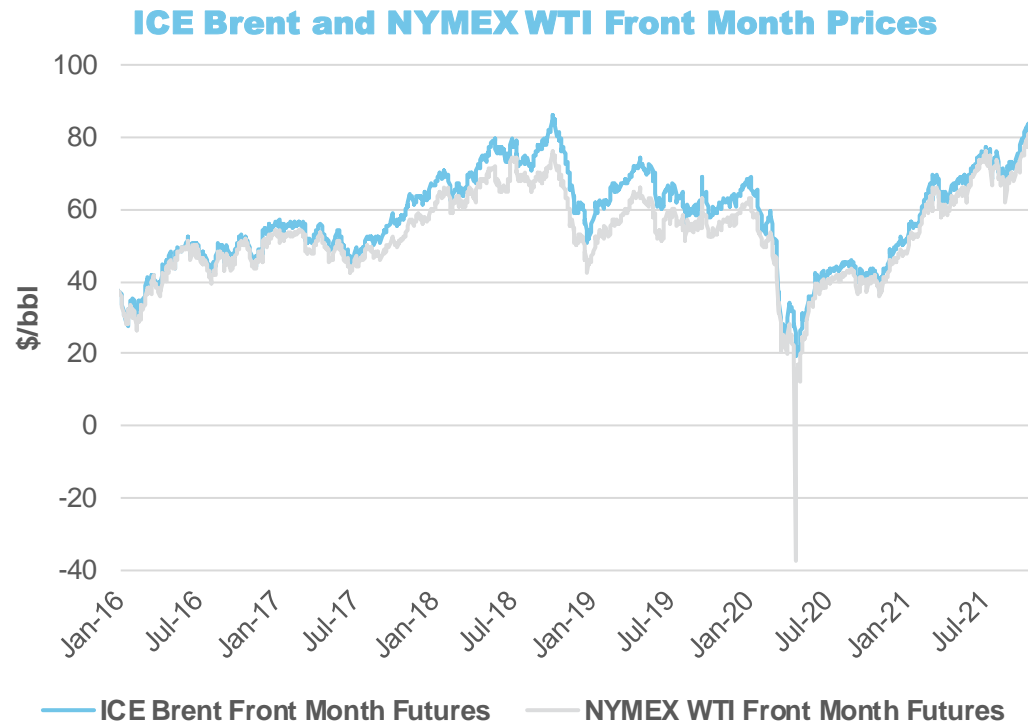
**Why is the USGC
contract being
re-developed?**



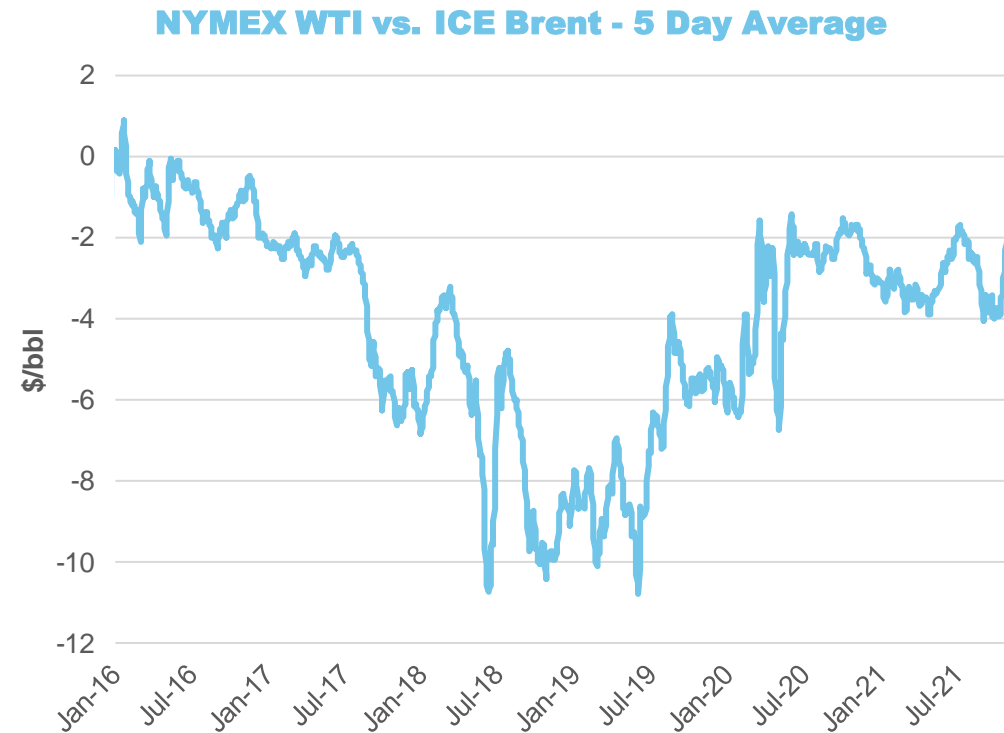
ICE Midland WTI American Gulf Coast (AGC) Futures: Why?

- The market wants and needs a physically deliverable contract that is transparent, liquid and truly representative of today's domestic market fundamentals
- To meet the needs for scale and redundancy, Magellan, Enterprise, and ICE agreed to work together to address the need in the market
- By aligning their vast supply capacity, system connectivity, storage capacity and export access, a truly representative domestic price can now be achieved
- With the dramatic shift in US crude fundamentals over the last 10 years, the marginal barrel that sets the domestic price has transitioned to WTI on the US Gulf Coast
- Houston's direct connectivity to more than half of US refining capacity, substantial waterborne exports and domestic outbound pipeline capacity, along with access to approximately 150 million barrels of crude storage capacity, solidify the price of WTI in Houston as the most representative price for US crude oil

WTI negative pricing in April 2020: A catalyst for change



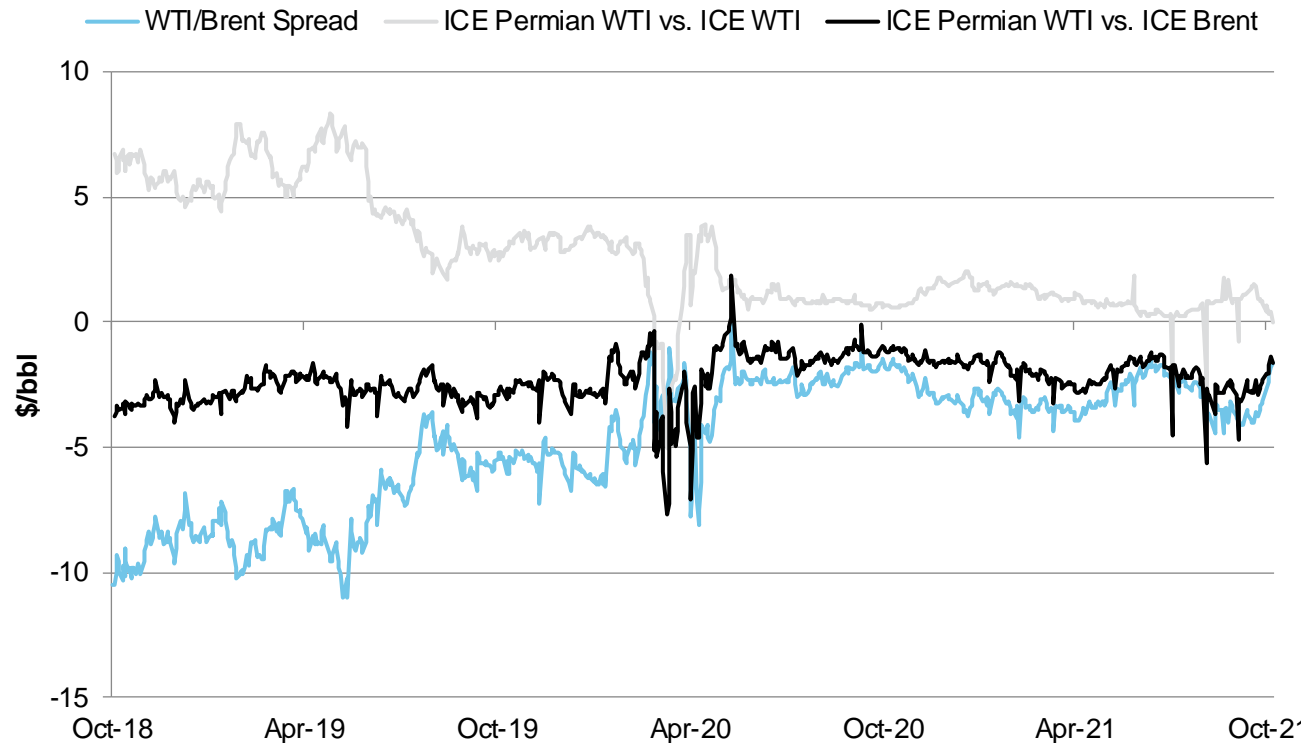
Source: ICE & CME



- April 20, 2020 closing prices: May NYMEX WTI -\$37.63, June ICE Brent \$25.57
- Futures prices have a very real impact on physical crude prices, which are quoted as a differential to NYMEX WTI Cushing

Key USGC crude price differentials drive exports & hedging

Key Crude Price Differentials



Source: ICE & CME

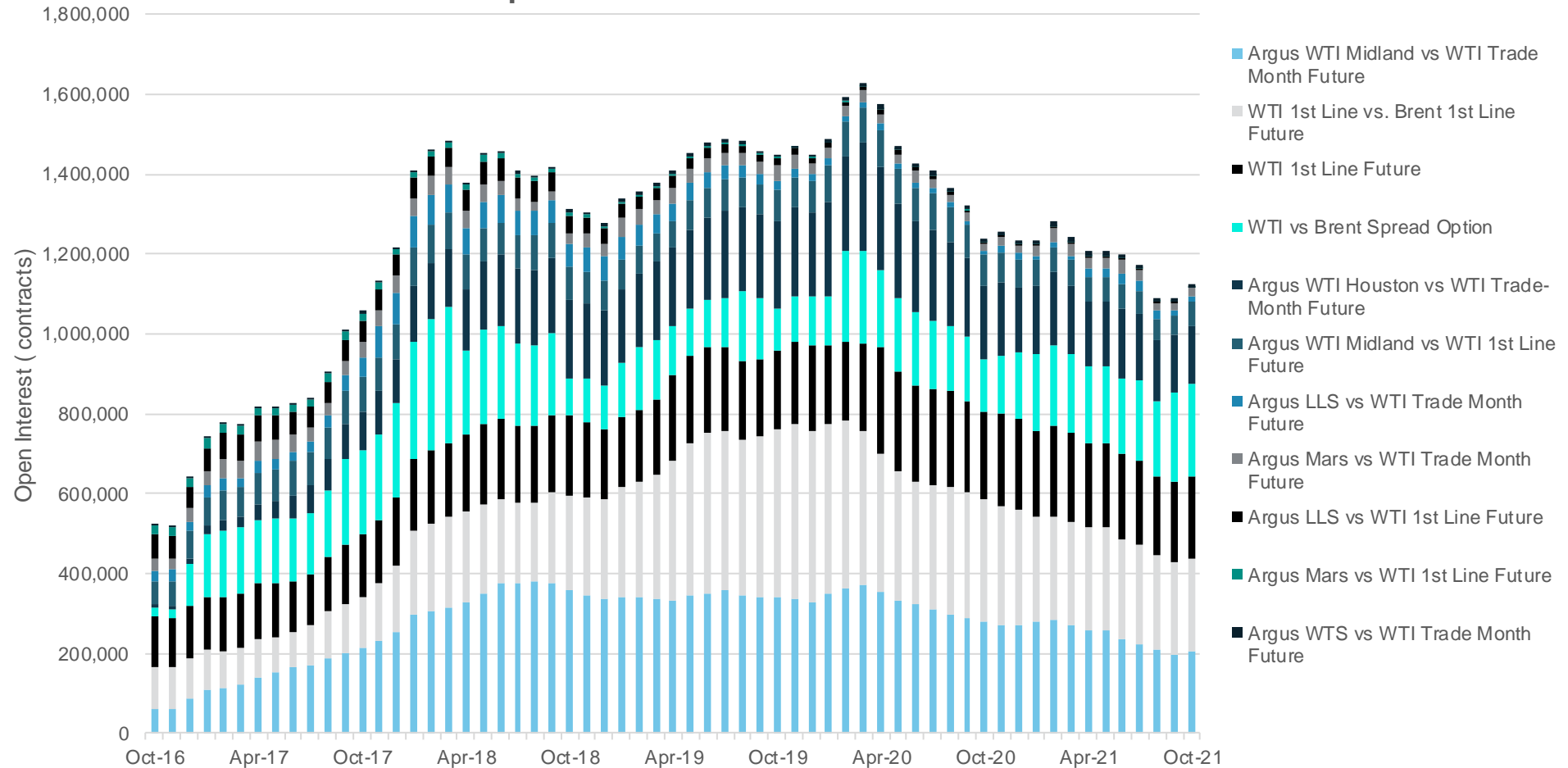
- Traders exposed to WTI where it meets the global waterborne market on the USGC. Once WTI hits the water, it prices off Brent or Dubai.
- For US crude exports to Europe, the key is WTI priced at Houston vs. Brent, not WTI Cushing. How to hedge/manage this risk?
 - A) WTI Cushing vs. ICE Permian WTI (HOU)*
 - B) WTI Cushing vs. Brent
 - C) ICE Permian WTI (HOU) vs. Brent

5 Trader does A and B. The WTI Cushing legs cancel, and trader is left with C.

* Note: this is the contract that is being re-developed; it will be re-named Midland WTI AGC (HOU)

North American Crude Grade Differentials

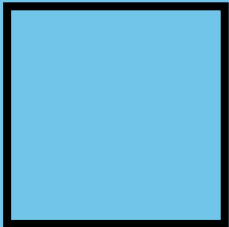
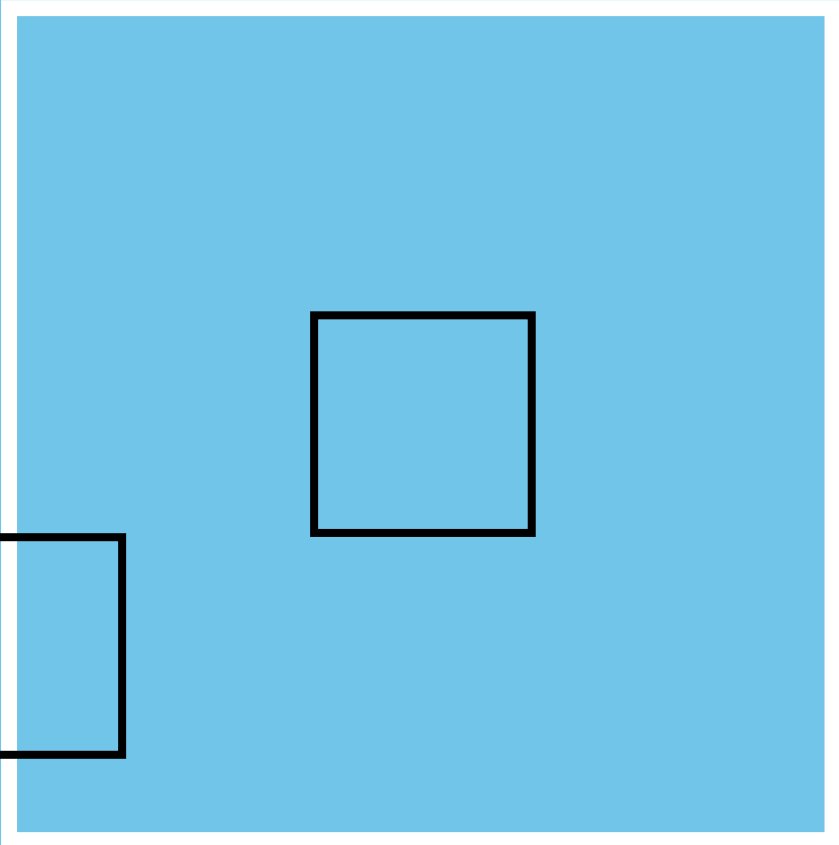
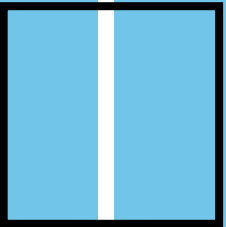
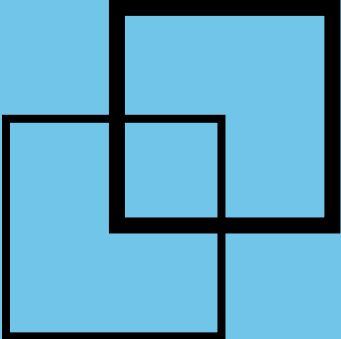
North America Crude Grade Differentials
Open Interest - ICE and NYMEX combined



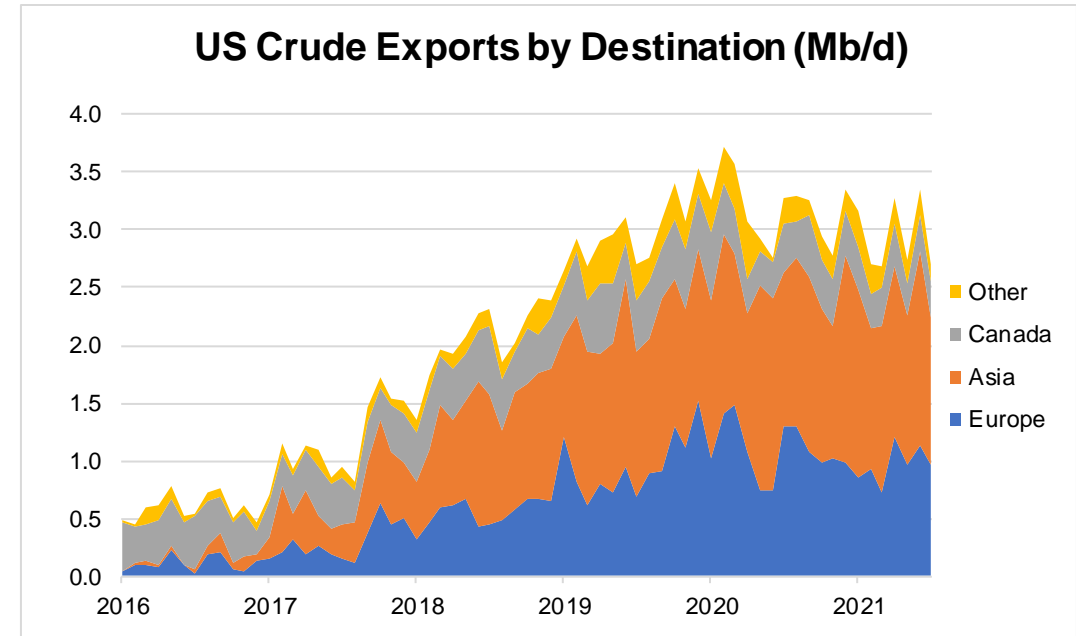
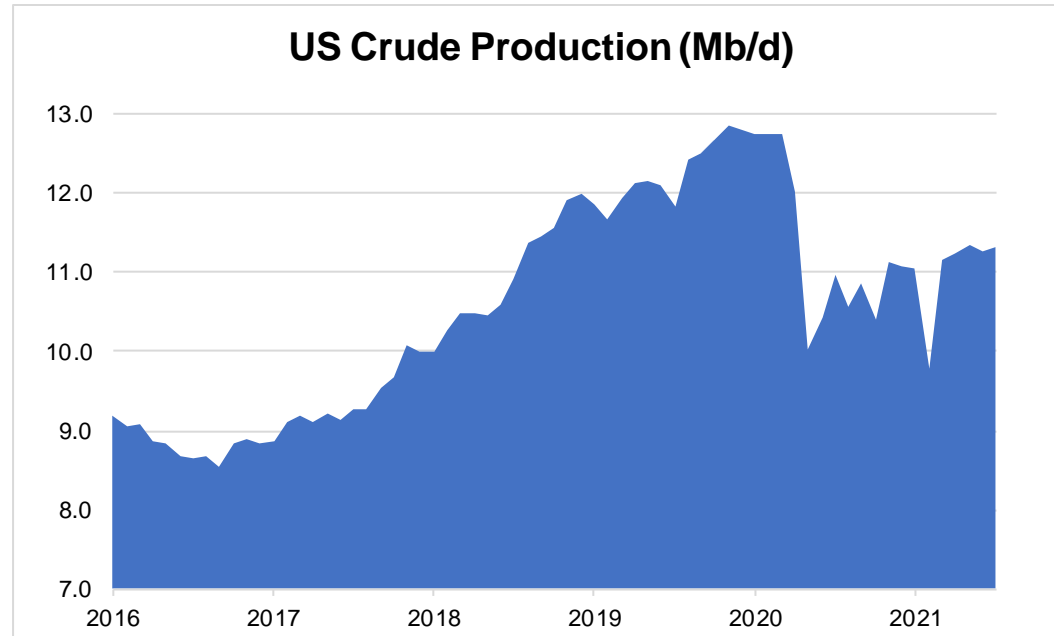
Source: ICE & CME

- A very significant market in terms of overall size
- There is room to make the market for grade differentials simpler and more efficient

USGC Crude Fundamentals



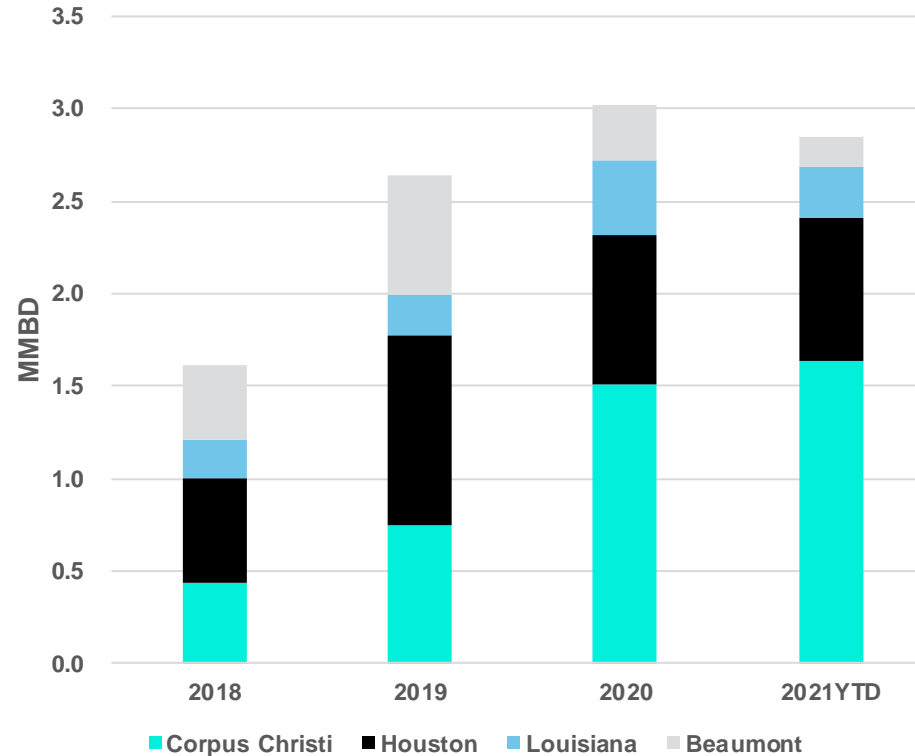
Key fundamentals: US crude output & exports by destination



Source: US EIA (latest monthly data through July 2021)

- US crude production - recently around 11.3-11.4 Mb/d
 - US EIA forecasts: 11.0 Mb/d in 2021 growing to 11.7 Mb/d in 2022
 - Growth expected to be driven by Permian
- US crude exports – recently around 2.7 Mb/d
 - 2021 YTD: 2.9 Mb/d (Asia: 1.4 Mb/d. Europe: 1.0 Mb/d)
 - In 2022: exports should increase in line with output. US refinery crude runs should increase in 2022, but this should be mainly met by higher imports of sour crude. Under normal circumstances, US refiners are maxed out in processing domestic light sweet grades.

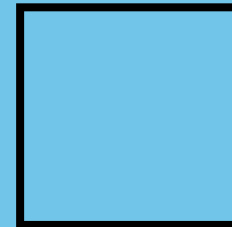
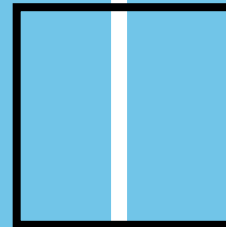
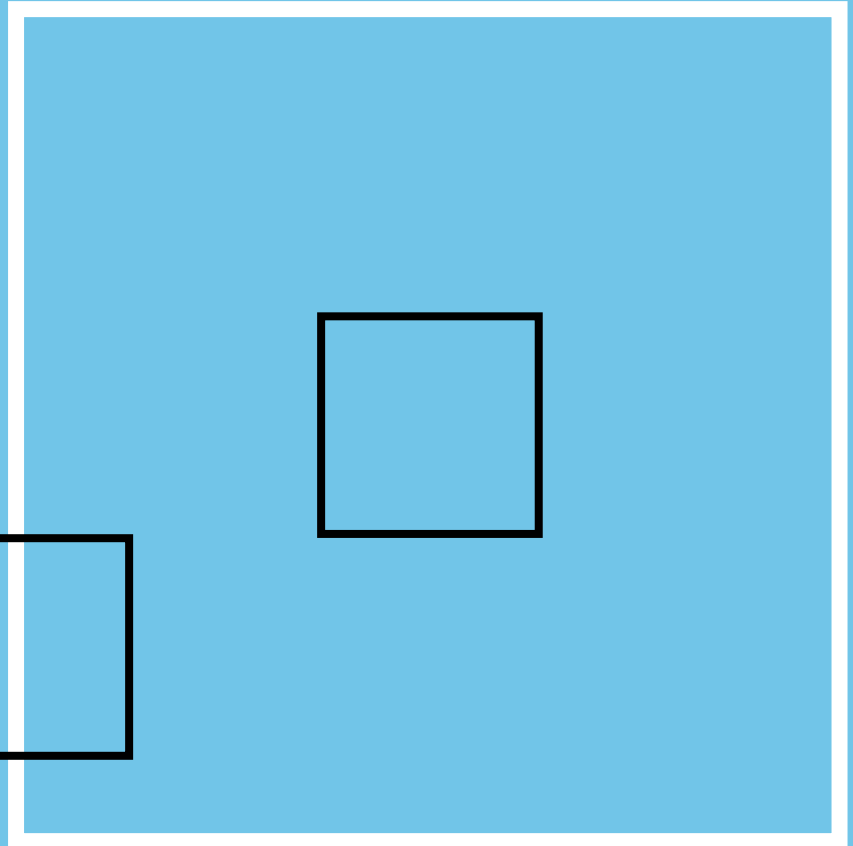
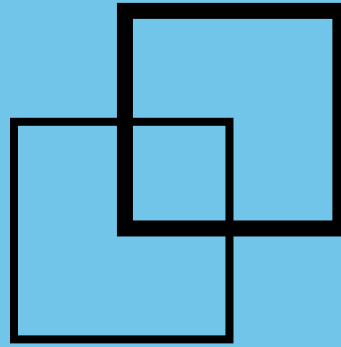
Key USGC fundamentals: US crude exports by loading port



Source: SunMark Consulting and RBN Energy

- US crude exports – 2021 YTD: 2.9 Mb/d
 - Houston: 0.8 Mb/d 2021 YTD (flat vs. 2020)
 - Corpus Christi: 1.6 Mb/d 2021 YTD (+0.1 Mb/d vs. 2020)

**ICE Midland WTI
American Gulf Coast
Futures: Features of
the Contract**



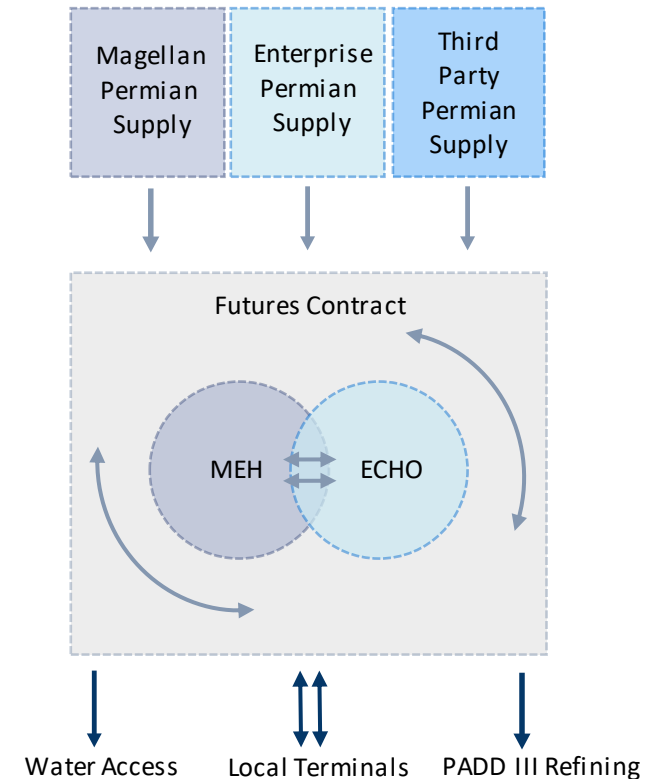
Integrated Midland WTI AGC Futures Contract

FUTURES CONTRACT OVERVIEW

- Futures contract for physical delivery at MEH and ECHO, establishing consistent quality and price transparency in the Houston market
- Outright USGC pricing decoupling from NYMEX WTI at Cushing
- Sellers dictate delivery location at MEH or ECHO
- Buyers will be matched at their location of preference stated on delivery instruction documents
 - To the extent that location preference is unavailable, Magellan and Enterprise will accommodate movements between MEH and ECHO for a standard published rate
- Quality specifications are the best representation of Midland quality WTI to date, developed through consultation with Permian producers, Gulf Coast refiners, and the international market

WHY HOUSTON?

- Backed by the most extensive crude oil infrastructure in the country, the Houston market provides optionality and redundancy of supply, storage, and take-away capacity, driving confidence for buyers and sellers
 - 4+ MMBPD of direct inbound Midland quality WTI connectivity between MEH and ECHO with access to all inbound Permian to Houston supply.
 - 6+ MMBPD of direct outbound connectivity to demand centers between MEH and ECHO facilities
 - 9+ MMBPD of outbound capacity
 - 4+ MMBPD Gulf Coast refining capacity
 - 490+ MMBbls of USGC (PADD 3) storage capacity (refineries, tank farms, terminals)



ICE Midland WTI American Gulf Coast crude quality specs

| PARAMETER | UNITS | MIN | MAX | REQUIRED TEST METHOD |
|------------------------------|------------|------|------|----------------------------------|
| API Gravity | °API, 60°F | 40.0 | 44.0 | ASTM D1298 or D5002 |
| Sulfur Content | % (m/m) | | 0.20 | ASTM D4294 |
| Mercaptan Sulfur | Ppm Wt | | 75 | UOP 163 |
| RVP | PSI | | 9.0 | ASTM D6377 |
| BS&W | % (v/v) | | 1.0 | ASTM D4007 per API MPMS 10.4 |
| Nickel & Vanadium (Combined) | mg/kg | | 3.0 | ASTM D8252 or D5708, Procedure B |

- A tight and robust spec, ICE contract rules and oversight, and Magellan and Enterprise's strict/proven quality programs should protect and give confidence to buyers and sellers regarding Midland-origin
- It would be difficult to blend and not exceed one of the specs
- Quality data will continue to be published by Magellan and Enterprise

Comparing Contract/Location Fundamentals

Houston's Infrastructure Advantage

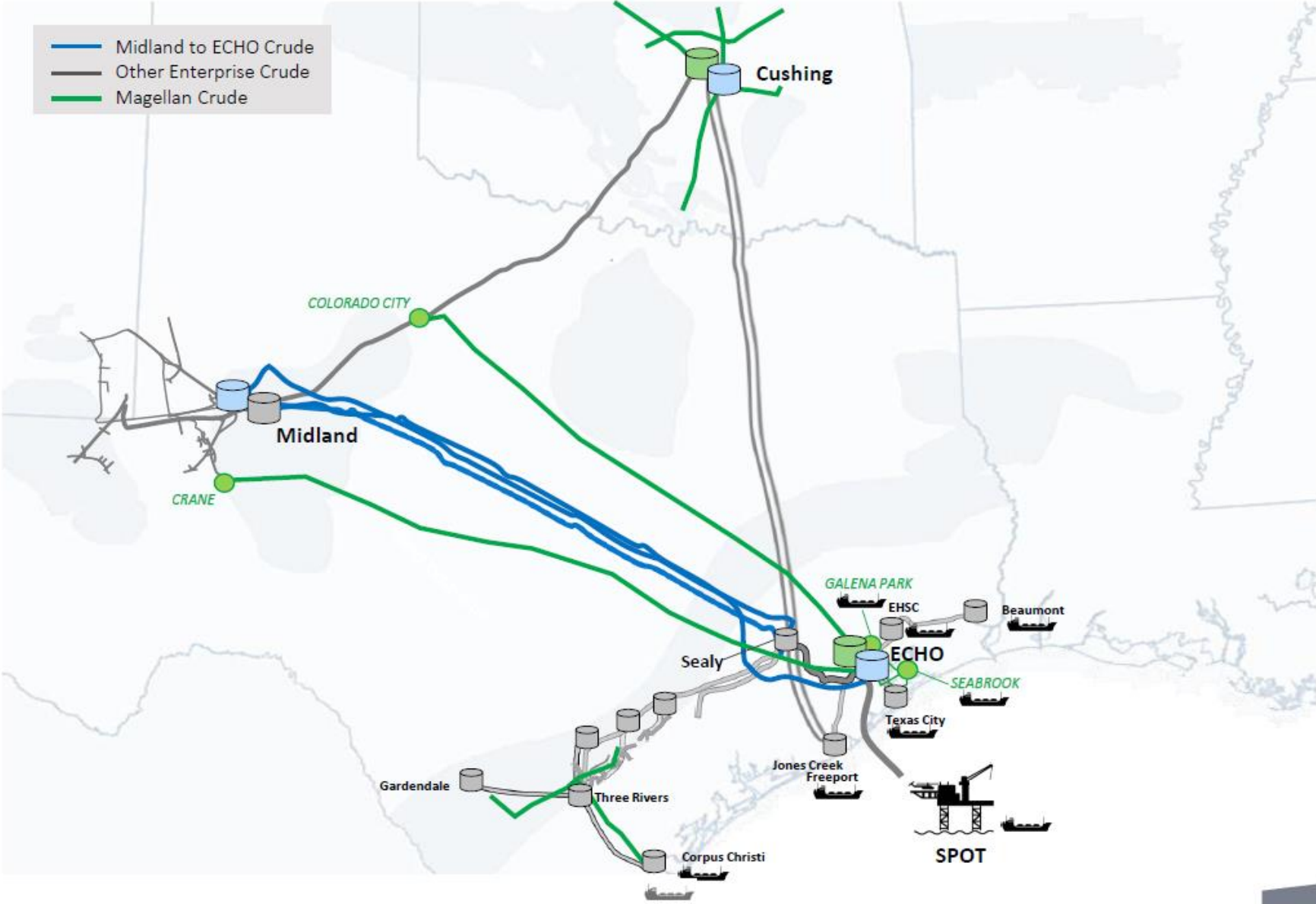
| MIDLAND WTI AMERICAN GULF COAST "HOU" | | NYMEX WTI CUSHING "CL" | | CORPUS MARKET | |
|--|-------------------|------------------------------|------------------|---------------|------------------|
| Destinations: | | Destinations: | | Destinations: | |
| <i>Enterprise / Magellan</i> | | <i>Enterprise / Enbridge</i> | | <i>N / A</i> | |
| Capacity | | Capacity | | Capacity | |
| Storage: | <u>62 MMBbls</u> | Storage: | <u>37 MMBbls</u> | Storage: | <u>N/A</u> |
| <i>TOTAL</i> | <i>150 MMBbls</i> | <i>TOTAL</i> | <i>94 MMBbls</i> | <i>TOTAL</i> | <i>40 MMBbls</i> |
| <i>Houston</i> | | <i>Cushing</i> | | <i>Corpus</i> | |
| Inbound: | ~4.0 MMBPD | Inbound: | <1 MMBbls | Inbound: | ~2.5 MMBPD |
| <i>(Direct Permian Supply)</i> | | | | | |
| Outbound: | ~9.0 MMBPD | Outbound: | ~3.2 MMBbls | Outbound: | ~6.4 MMBPD |

Source: ICE, Magellan, and Enterprise

Ingredients for successful contracts include:

- Expansive storage
- Access to supply
- Connectivity to demand centers
- A diverse group of buyers and sellers
- Liquidity

Magellan and Enterprise Crude Systems



Magellan / Enterprise Crude Storage Supporting Midland WTI AGC

| TERMINAL | CAPACITY |
|-----------------------|------------------|
| MEH | 9 MMBbls |
| ECHO | 9 MMBbls |
| SEALY | 4 MMBbls |
| TEXAS CITY | 4 MMBbls |
| FREEMPORT | 3 MMBbls |
| GALENA PARK | 3 MMBbls |
| SEABROOK | 4 MMBbls |
| EHSC | 27 MMBbls |
| Total Capacity | 63 MMBbls |



Midland WTI AGC Supply

The Houston Hub

| Inbound Supply by Pipeline <i>Estimated</i> | |
|--|-------------------|
| M2E1 | 620 MBPD |
| M2E2 | 225 MBPD |
| M2E3 | 450 MBPD |
| Wink to Webster | 1,100 MBPD |
| Eagle Ford | 400 MBPD |
| Ted Collins | 250 MBPD |
| KMCC | 350 MBPD |
| Longhorn | 275 MBPD |
| Bridgetex | 440 MBPD |
| TOTAL | 4,110 MBPD |

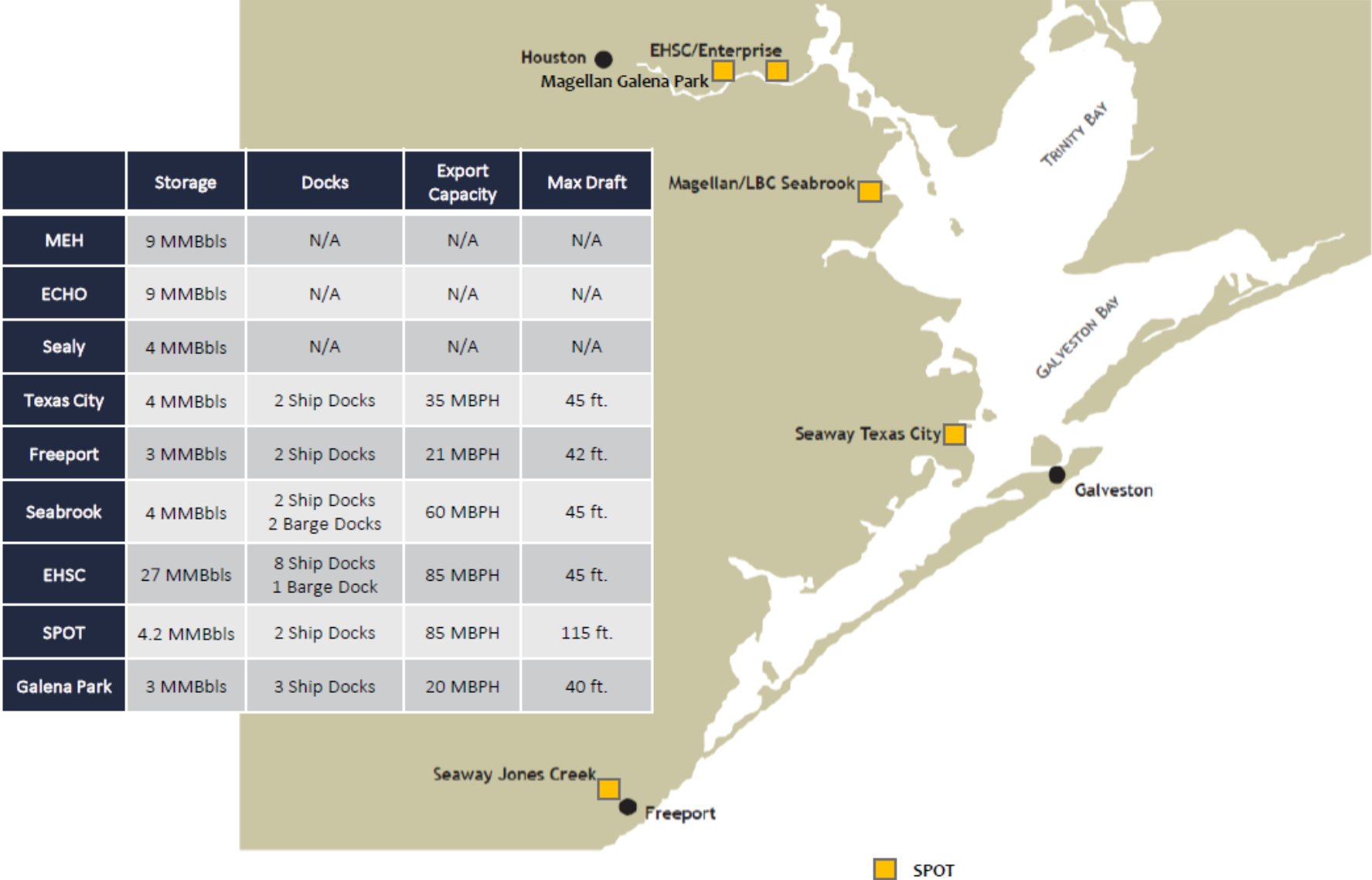
Source: ICE, Magellan, and Enterprise



HOU Connectivity & Demand Centers

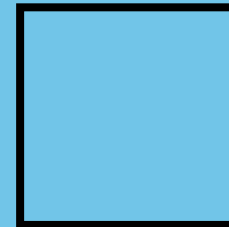
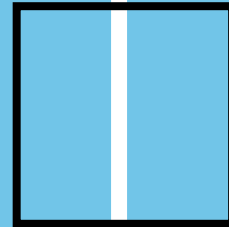
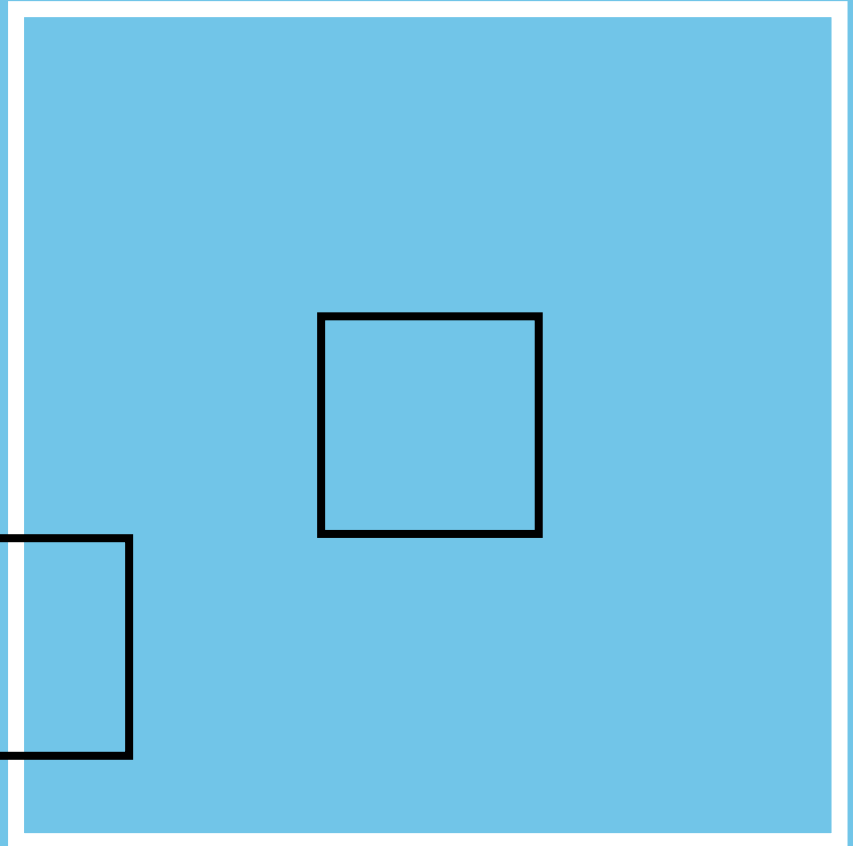
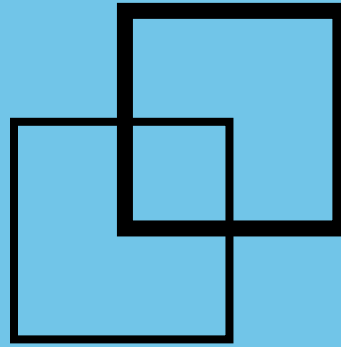
| | DELIVERY POINT | CAPACITY | MAGELLAN | ENTERPRISE |
|--------------------|---------------------------------------|-----------|----------|------------|
| Refineries | Exxon Baytown | 560 MBPD | ✓ | ✓ |
| | Shell Deer Park | 286 MBPD | ✓ | ✓ |
| | Houston Refining | 264 MBPD | ✓ | ✓ |
| | Pasadena Refining | 112 MBPD | ✓ | ✓ |
| | Valero Houston | 191 MBPD | ✓ | ✓ |
| | Galveston Bay Refining/MPC Texas City | 585 MBPD | ✓ | ✓ |
| | Valero Texas City | 225 MBPD | ✓ | ✓ |
| Outbound Pipelines | Port Arthur Lateral | 744 MBPD | | ✓ |
| | Shell Zydeco | 375 MBPD | ✓ | ✓ |
| Docks | EHSC | 900 MBPD | ✓ | ✓ |
| | Seaway Texas City | 840 MBPD | | ✓ |
| | Seaway Freeport | 504 MBPD | | ✓ |
| | Seabrook | 700 MBPD | ✓ | ✓ |
| | Galena Park | 100 MBPD | ✓ | |
| TOTAL | | 6.4 MMBPD | | |

Combined Houston-Area Exports



Source: ICE, Magellan, and Enterprise

Summary and Conclusions



Summary and conclusions

- The pairing of the Magellan and Enterprise systems provides the needed redundancy in asset ownership, extensive connectivity and capability, and industry expertise that will provide the market with the utmost confidence in a successful contract.
- Today, oil producers, refiners, exporters and traders use a combination of two, three or more basis trades to attempt to hedge their U.S. Gulf Coast exposure, which introduces unnecessary risk to crude prices and logistics from Cushing, Oklahoma.
- The ICE Midland WTI AGC futures contract will enable participants to directly price and hedge the marginal domestic barrel (Midland WTI quality crude) in the most efficient and cost-effective manner. Producers can hedge production, refiners and exporters can hedge supply and traders can easily manage positions
- Very strong infrastructure: supply of Midland-origin WTI crude, system connectivity to domestic refining demand and export access, crude storage capacity

Contacts and resources

For more information on ICE Midland WTI American Gulf Coast Futures

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