

Tailwinds On The U.S. Gulf Coast: How The Boom In U.S. Energy Production Is Creating Opportunities For Real Estate Investment



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EXECUTIVE SUMMARY

The Federal Government's commitment to deepen the Mississippi River channel and its decision to allow the exportation of crude have created many opportunities in the U.S. Gulf Coast region for private investment and development. Yet the country's resurgence in energy production is temporarily impeded by a lack of sufficient infrastructure necessary to match supply with demand. As the glut of U.S. crude and demand for infrastructure increases, the need for industrial facilities on the Gulf Coast continues to grow. These facilities are essential to economic development along the nation's southern energy corridor. The real estate industry's investment in this region emphasizes the interdependence of the public and private sectors to create value.

OPPORTUNITIES ON THE COAST

Investment interest in Tier II and III markets, secondary markets defined by CBRE's Tier methodology, is increasing. Most markets are set to exceed levels of employment and gross metro product not seen since the last cyclical peak (ULI & PWC, 2018). This has increased demand for real estate, but with fewer noninstitutional investors since the last recession and less access to capital, these markets have not seen oversupply. While industrial growth in the U.S. has made tremendous gains over the past five years with 1.5 billion square feet constructed for warehousing and manufacturing space, supply has started to come online slower than anticipated in Tier I markets (ULI & PWC, 2018). With industrial cap rates reaching all-time lows investors are looking elsewhere for higher yields. This is timely for the U.S. Gulf Coast. With the commitment to deepen the Mississippi River channel in late 2019 and the removal of restrictions on oil exportation, opportunities have been created for private investment and development. Not only is demand growing for pipelines, transport terminals, and other transportation infrastructure, but also for industrial warehousing and manufacturing space.

North American oil production has increased by 24 percent from 2016 levels, and reached 15 million barrels a day in 2019. This is big business for North American refineries located on the U.S. Gulf Coast as they utilize cheap crude for conversion into gasoline, diesel, polyethylene, polypropylene, and other energy-intensive chemicals and plastics (Elliott & Olsen, 2018). While investor portfolios are expanding beyond industrial big-box distribution centers for logistics, they are meeting demand on the Coast for manufacturing facilities and warehouses to serve petrochemical manufacturers in the U.S. and Mexico (Mongelluzzo, 2015). The timing is also important. Wage increases in China continue to strengthen the competitiveness of Central and South American manufacturing, destinations for refined and unrefined U.S.

energy products. Additionally, intense oil and gas production in North America, especially in the Permian Basin, has created pipeline bottlenecks providing opportunities for industrial development to focus on terminals for exporting crude and serving energy producers (Elliot, 2018).

The increase in pipeline infrastructure has made crude export difficult and has caused oil to become landlocked, resulting in lower prices (Elliott & Olsen, 2018). Several major pipeline projects are underway to increase capacity on the U.S. Gulf Coast. Though tariffs on steel may cause delays in pipeline construction, a larger problem impeding the export of these products is the lack of sufficient port infrastructure necessary for transportation (Elliot, 2018). The amount of oil extracted per day in the Permian Basin alone is 3.3 million barrels, more than the daily average produced in the United Arab Emirates (Dow Jones Industrial News, 2018).

Even if pipeline infrastructure improved overnight to meet this capacity, only one existing U.S. shipping terminal, the Louisiana Offshore Oil Port (LOOP), located south of New Orleans, can accommodate giant tankers called Very Large Crude Carriers, or VLCCs (Elliot, 2018). Today,

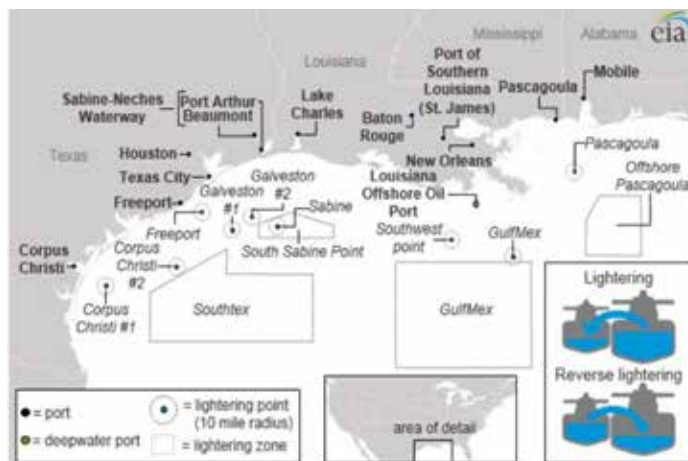


Figure 1. U.S. Gulf Coast petroleum ports and lightering areas. Source: U.S. Energy and Information Administration.

LOOP primarily imports crude and transports it to refineries across Louisiana and throughout the Midwest and Canada. The facility's undersea pipelines, storage capacity, and deep-water single-point mooring facilities provide unique advantages compared to other U.S. Gulf Coast port facilities. Still, LOOP is set to shift from imports to become the top U.S. exporter as the crude boom continues. As the shift to exporting intensifies, the industry will have to find ways to develop export infrastructure.

INFRASTRUCTURE NEEDS

Most U.S. ports and waterways are already congested and need infrastructure investment. Many ports, including these on the U.S. Gulf Coast, need deeper shipping channels and wider turning basins, services developed by the U.S. Army Corps of Engineers, as well as new cranes and container terminals. In August 2018, a \$238 million plan to dredge the Mississippi River, ensuring a depth of 50 feet from its mouth to Baton Rouge, was approved by the U.S. Army Corps of Engineers and is expected to commence (Schleifstein, 2018). Congress authorized depths of 55 feet between the River's mouth and Baton Rouge in 1985. The channel has only been deepened along this 256-mile distance to 45 feet with the last dredge in 1994.

By providing an additional five feet of depth along the channel between the River's mouth and Baton Rouge, Federal and state government investment will allow New Panamax ships to reach four of the top performing 15 U.S. ports that handle, not only 60 percent of the nation's grain, but also connect to 14,500 miles of inland navigable waterways (Times Picayune, 2018). This type of investment is essential to U.S. logistics, including the transportation of energy. The growing business of logistics alone represents 10 percent to 15 percent of OECD economies as it continually places pressure on ports and surrounding industrial space to adapt



Figure 2. Barge in inland Louisiana waterway unloading crude into storage. Source: U.S. Department of Energy.

to modern needs. Without investment in these spaces, they will suffer economically (Pun, Nurse, 2010 & Rushton, Oxley, Croucher, 2000). This is especially true as the U.S. energy production resurgence is linked to the decline of net energy imports which reduces the U.S. trade deficit.

In 2016, Congressional leaders agreed to end a 40-year-old restriction on oil exports in order to increase market efficiency, stimulate the U.S. economy and boost national security (Harder & Cook, 2016). While the development of sufficient crude export infrastructure will be lengthy, Gulf Coast refineries, a third of the total U.S. number, will continue to refine the crude glut at a discount before exporting it. Still, after decades of investment, most facilities are engineered toward refining heavy Canadian and Venezuelan crudes. As these facilities make petroleum products such as gasoline, diesel, heating oil, jet fuel, petrochemical feedstocks, waxes, lubricating oils, and asphalt, it will be economical to import and transfer crude from tankers until supply becomes restricted. It is global demand from foreign refineries that will continue to drive U.S. energy exports, projected to reach four million barrels by 2020 from virtually nothing in 2015 (S&P Platts, 2018).

DEMAND FOR U.S. CRUDE

Today, U.S. crude is primarily consumed by China. Amid the contentious trade climate between both nations and a list of retaliatory tariffs on U.S. imports announced on August 8, 2018, import duties were recently announced only on oil products such as asphalt shale, oil shale, tar sand, liquified petroleum gas (LPG) and coal, but not on U.S. crude

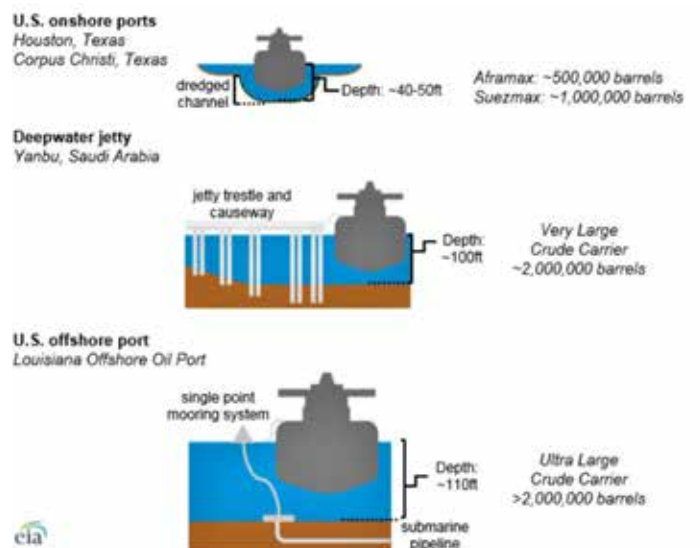


Figure 3. Port depth and crude oil export facility examples. Source: U.S. Energy Information Administration.



Figure 4. Global Ship Tracking from www.marinetraffic.com. Cargo vessels shown in green. Tankers shown in red.

(S&P Platts, 2018). Still, uncertainty has caused Chinese refineries to withdraw from purchasing U.S. crude. Despite this, Asia is still projected to increase its consumption of U.S. sweet and sour crude grades as countries such as India, Taiwan and Indonesia shift from energy producers such as Nigeria and Iran.

For instance, India has recently modernized its refineries whereby demand will increase for U.S. WTI sweet, primarily shipped from the U.S. Gulf Coast. Taiwan's Formosa Petrochemical Corporation purchased one million barrels of Mars, a medium sour grade crude extracted from the Gulf of Mexico, in October, 2018, while Malaysia's Petronas has been purchasing U.S. Mars since August, 2018 (S&P Platts, 2018). This oil is shipped from terminals in southeast Louisiana where the Mars Crude Oil Pipeline delivers oil from the Mississippi Canyon, an undersea canyon in the Mississippi Submarine Valley.

DEVELOPMENT ON THE COAST

Private enterprise is investing in terminals and port facilities to meet global demand, whereas the U.S. public sector has lagged. Several large announcements

have originated from the U.S. Gulf Coast this year. Trafigura, a Swiss commodity trading company, through its subsidiary Texas Gulf Terminals, is planning on the construction of a mega-terminal located 12.7 miles off the coast of Corpus Christi to accommodate VLCCs for crude export. Sentinel Midstream also plans to accommodate VLCCs with the 85,000 barrel per day terminal Texas GulfLink. Enbridge Inc., Kinder Morgan and Oiltanking are collaborating and have secured sites to accommodate VLCCs as well as Enterprise Product Partners LP.



Figure 5. U.S. Gulf Coast map shows refineries indicated by orange dots, new terminals indicated by black squares, LOOP indicated by blue square, and pipeline network including Bayou Bridge Pipeline indicated by green line and proposed extension indicated by black line.

Tallgrass Energy LP, together with Drexel Hamilton Infrastructure Partners, has announced a \$2.5 billion 700-mile pipeline and crude export terminal at the mouth of the Mississippi River in Plaquemines Parish, Louisiana. The facility is meant to hold 20 million barrels of crude in storage and transport 800,000 barrels of crude from Cushing, Oklahoma. Additionally, Marathon Petroleum is adding a terminal for refined product export in St. John the Baptist Parish on the Mississippi River, adding storage space for 10 million barrels and docks capable of loading 240,000 barrels a day. Phillips 66 Partners LP's 480,000 barrel per day Bayou Bridge Pipeline, in a JV with Energy Transfer LP, will soon operate from Nederland, Texas, to St. James Parish. Phillips 66 Partners LP, in a JV with PBF Logistics LP and Harvest Midstream Company, is also set to extend this pipeline's reach in 2020 to refineries little more than 10 miles away from New Orleans, but on the Mississippi River in both Plaquemines and St. Bernard Parishes.

In addition to these announcements, the LNG industry is also announcing numerous refinery developments and export terminals on the Texas and Louisiana coasts. Meanwhile, as LOOP becomes the nation's top exporting facility, secondary and tertiary industrial infrastructure along the coast will be impacted. Most terminals have water access since transport by water and pipelines are the most cost effective. Trucks and tankers can be used for refined products, but transporting crude by rail is cost prohibitive and poses environmental risks. Because of this, prices are soaring on usable land due to speculation. Still, as capital flows into these areas, opportunities are becoming available to service the value and supply chains of the oil and gas industries. These places will need value added manufacturing sites such as pipe manufacturing facilities or break bulk terminals used to unload and warehouse individually handled cargo. Avondale Marine, a JV between Hilco Redevelopment Partners and T. Parker Host formed



Figure 6. Louisiana refinery in St. Rose, Louisiana. Source: Flickr.

in 2018, is repurposing a historic shipyard to service this activity. It is an example of how global trade and a growing U.S. energy market stands to reinvigorate the area.

AVONDALE SHIPYARD REDEVELOPMENT

Avondale Shipyard was once the largest private employer in Louisiana providing over 26,000 jobs to the state's residents at its peak (The West Bank Beacon, 2018). Over the eight decades of its operation beginning in 1938, the shipyard constructed and repaired various types of military and commercial vessels (Ragen, 2001). The shipyard constructed fishing boats, drilling barges, amphibious ships, patrol boats, destroyers, and icebreakers (Times Picayune, 2018). With 20 employees, the shipyard started as a repair and barge construction facility for vessels on the Mississippi River. By 1941, employment at the shipyard was over 200 and peaked in the 1980s (2018). The shipyard closed in 2014 terminating 5000 jobs (Business Report, 2018).

During the 1940s, the shipyard began constructing vessels for the military through contracts awarded by the United States Maritime Commission, and later advanced to building larger military vessels such as destroyers and destroyer escorts throughout World War II and the Korean and Vietnam



Figure 7. Barge unloads break bulk from nearby manufacturing facility. Source: U.S. Department of Energy.



Figure 8. Crude oil storage in Nederland, Texas. Source: U.S. Department of Energy.

Wars (Broach, 2018). Louisiana's oil industry expanded after World War II, and the shipyard started constructing oil rigs as well as drilling barges. The Ogden Corporation purchased the shipyard from the original owner, Avondale Marine Ways, in 1959 (Wall Street Journal, 1985). The shipyard became a publicly traded company in 1988 called Avondale Industries, Inc. (Broach, 2018). Litton Industries merged with Avondale Industries in 1999 and the shipyard was subsequently acquired by Northrop Grumman with the purchase of Litton Industries in 2000 (Defense Daily, 1999). Northrop Grumman's shipbuilding business was spun off as Huntington Ingalls Industries in 2011 (Business Wire 1999).

As the U.S. Navy throttled down its shipbuilding efforts in the 1990s, Avondale's shipbuilding business declined, leading to its closure in 2014 (Broach, 2018). The closure of the shipyard was a process that lasted from 2010 for five years as Huntington Ingalls Industries moved its shipbuilding operations to Pascagoula, Mississippi (Ocean News Technology, 2010). At the announcement of the closure, residential real estate throughout metro New Orleans was on the rise by double digits year over year, except for the West Bank of the Mississippi River, the location of the Avondale shipyard, where prices dropped to 41.8 percent (Muller, 2010).

Although Avondale Marine does not intend to bring shipbuilding back to the narrow 270-acre site, the venture will focus on manufacturing, warehousing and distribution as it services nearby petrochemical facilities and provides the possibility for terminal colocations. Recent industrial acquisitions by U.S. Foods and Cornerstone Chemical will aid in its development. With access to rail, the site is also connected to other Hilco Redevelopment industrial sites in Chicago and Baltimore destined to be logistics hubs (Nitkin,

2018). Other than the granting of a railroad right-of-way permit by the State of Louisiana, and a payment in lieu of taxation (PILOT) by Jefferson Parish, Hilco Redevelopment received no additional government incentives for the company's investment.

TAILWINDS

Despite the site's narrowness, opportunities exist to facilitate and expand the increasing container traffic on the Mississippi River. For example, The Port of New Orleans recently moved "more containers in 2018 than at any time in its history: 591,253 twenty-foot equivalent units (TEUs), up 12.3 percent compared to one year ago" and, in the same year, hosted the Pusan C. 9,500-TEU vessel, the largest container ship to ever call on the Port (American Shipper, 2019). The recent increase in volume can be attributed to port leadership putting emphasis on growing capacity. The takeover of the New Orleans Public Belt from the City of New Orleans by the State of Louisiana was also instrumental. The New Orleans Public Belt is served by six Class 1 railroads - BNSF, Canadian National, CSX, Kansas City Southern, Norfolk Southern, and Union Pacific - together comprising a network of over 132,000 miles of track.



Figure 10. Container ship at the Port of New Orleans.



Figure 9. Elevated starboard quarter view of the commercial fleet oiler, USS Joshua Humphreys.



Figure 11. Containers loaded onto rail at the Port of New Orleans.

Space at the port, however, is limited. The facility plans to double its capacity and invest heavily in 100-gauge cranes, road congestion and constrained land supply problems remain. The port's plans to redevelop brownfield sites along each side of the Inner Harbor Navigation Canal, also called the Industrial Canal, through its Port Inner Harbor Economic Revitalization Plan (PIER), will take time (Waterways Journal, 2018). This is an opportunity for Avondale Marine to purchase land and expand its services to meet the needs of the area.

Since the 2018 Avondale Shipyard purchase, the area has seen an uptick in activity. Fuji Vegetable Oil, a specialty oils producer based in Osaka, Japan, recently broke ground at the International-Matex Tank Terminals Avondale facility on a food processing, storage and distribution complex in next to the Avondale Shipyard site. The lower Mississippi River region is a hub for tropical commodities, and the Fuji plant will utilize the area's geographic advantages as it refines raw palm oil. Additionally, the area has also seen announcements for several planned community and workforce housing in anticipation of demand. These initiatives serve as a testament to the possibilities of economic development.

Louisiana's potential must be weighed against several factors. First, Louisiana has the highest combined state and local sales tax in the nation. Second, local government entities were recently given autonomy over how the state's 80-year-old Industrial Tax Exemption Program (ITEP) is administered, potentially complicating the expansion of the energy industry in Louisiana. Third, the state's D+ infrastructure rating in the latest study by the American Society of Civil Engineers illustrates its fiscal condition (ASCE, 2017). Though these factors impede the state's ability to take full advantage of Gulf Coast tailwinds, Louisiana is positioned better today than recently.

The state's recent temporary sales tax increase has provided its coffers with a \$300 million surplus and improved credit rating. Discussions on how to allocate the surplus are underway, and the state's governor is proposing a portion of it be spent on infrastructure. This temporary tax will most likely become permanent under the state's next administration, providing additional opportunity for the state to update its energy corridor infrastructure. Additionally, because Louisiana's bonding capacity is constitutionally tied to its revenue projections, the \$300 million surplus of fiscal year 2017-2018, subsequent to a \$1.5 billion shortfall,

means that the lawmakers are now unrestrained in issuing bonds for large industrial projects conducive to economic development.

Furthermore, as the Fixing America's Surface Transportation Act (FAST) is set to expire in 2020, the Trump administration has signaled that it will make infrastructure spending a priority. The likelihood that the U.S. Gulf Coast will see Federal investment is high given the compositions of both the House and Senate Committees on Transportation and Infrastructure. These potential improvements in the near future will certainly be attractive to investors as actions are taken to capitalize on emerging energy trends (Vanelslander, Chomat, Roumboutsos & Bonnet, 2014). The tailwinds on the U.S. Gulf Coast are providing an abundance of opportunities for investors and governments alike. The opportunities for economic development began with changes in government energy export policy and commitment to deepen the Mississippi River channel. The leverage of the public sector and its importance to the real estate industry is unequivocal. Equally essential is the private sector's influence on economic development.

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