

Greater Houston Port Bureau

Port Bureau News

Summer 2022



2022 Maritime Leader
of the Year

Ric Campo

Also in this Issue: Captain's Corner | USCG Severe Weather Planning |
Texas Economy | Port Watch | AWO Jones Act |
2022 Trends in Building Port Infrastructure | Commerce Club |
EIA Short-Term Energy Outlook |

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About the Cover

Ric Campo is often seen wearing Port Houston maintenance shirts whether on the port or at industry events. It's about on-site motivation and how he connects with his team. He wears the shirt as a sign of pride and respect for his people in the field. Read more on page 22.



The Jones Act is not only critical to the development and flow of energy in Texas and across the United States, but to the integrity of the entire American supply chain. Read more on page 12.

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Captain's Corner

All Hands on Deck

Years ago, I boarded the Coast Guard square-rigged sailing ship EAGLE as a cadet for a training cruise. It was my first experience at sea. It was hard work. There was endless maneuvering of the sails which required intelligence, cooperation, and muscle. The first thing I learned was how much the sea rolls and which side was leeward. When my sea legs arrived, I began learning the 154 lines and their salty “clew-, bunt-, and leech-“ line names. More importantly, I learned that to maximize the sails' effectiveness, the entire crew has to work in unison, pulling and releasing the lines with just enough strain to keep everything in check.

Why do I mention this? Because there are a lot of people pulling hard on the congressional strings for the \$31 billion Coastal Barrier “Ike Dike“. Your Port Bureau Board of Directors applauds the momentum to fund such a project, but they also want to start pulling on the design lines to ensure it's right for us.

Recently the Board wrote a letter to the Port of Houston Authority Commission, the Gulf Coast Protection District Board of Directors, and the Harris County Board of Pilot Commissioners asking for support for the Houston Pilots navigation study of the preliminary gate design. The letter's intent was to encourage the storm surge safety efforts while enabling the long-term viability of the Houston Ship Channel as our nation's most critical waterway.

Like many other ports, Houston has met the ever-growing needs of maritime transportation by expanding the Ship Channel. As everyone knows, we are now in the eleventh expansion project to accommodate increasingly larger vessels. The proposed coastal barrier system includes a set of two 650' gates between Bolivar Peninsular and Galveston Island. The navigation study mentioned above would include evaluating whether the dual 650' gates will safely accommodate current and future vessel sizes and allow for continued two-way traffic.

Another line they want to pull on is the potential location of the gates and their impact on the Bolivar Roads' inner anchorage areas. The inner anchorages serve as critical space for deep-draft vessels to await orders, effect repairs, or receive bunkers in sheltered waters that are unavailable in the offshore anchorage. The significant value of these areas is why the Lone Star Harbor Safety Committee has spent years pushing to expand our inner anchorages. The location of the gates could be problematic in our system of staging, bunkering, and preparing vessels for arrival. Nearly 100,000 metric tons of bunkers are delivered to vessels anchored in the inner anchorage every month – that's about \$1 billion per year at current bunker prices! Proper gate placement is critical to the continued efficiency of our port.

Understanding the hydrology, traffic limitations, and safety of the gates is of paramount importance to all stakeholders in the port region. On the EAGLE every major sail maneuver required all hands-on-deck, working together, and paying attention - and your Port Bureau Directors believe this is an all-hands-on-deck decision for our communities, waterway, and industrial complex. It is time to get your sea legs, study up on what is being proposed, and weigh in on what is the best design for our channel. Give me a call to get involved in pulling and releasing the multiple lines for an optimal Coastal Barrier plan.

Bill



CAPT Bill Diehl
USCG (Ret.), P.E.
GHPB President



Severe Weather Safety Planning For Vessels And Facilities

Coast Guard Sector Houston-Galveston
Marine Safety Information Bulletin 11-22

The 2022 Hurricane Season officially started on June 1, 2022. All facilities and vessels in the Houston-Galveston Captain of the Port ("COTP") zone are encouraged to review their severe weather plans and begin preparations for the hurricane season.

Sector Houston-Galveston has instituted a Port Condition Matrix with two tracks, a 'traditional' track and a 'modified' track, designed to clearly communicate with the port community whether the COTP intends to close the port. Both tracks have the exact same expectations except with the 'traditional' track the COTP intends to close the port, whereas with the 'modified' track, the COTP does not intend to close the port due to low intensity or low likelihood of a tropical storm.

Regardless of track, the COTP will issue Marine Safety Information Bulletins (MSIBs) and broadcasts declaring the Port Condition with further requirements and instructions for vessels and facilities. The Port Conditions are:

- Port Condition Whiskey – 72 hours prior to arrival of tropical storm force winds associated with tropical storm activity;
- Port Condition X-Ray – 48 hours prior to arrival of tropical storm force winds associated with tropical storm activity;
- Port Condition Yankee – 24 hours prior to arrival of tropical storm force winds associated with tropical storm activity;
- Port Condition Zulu (FOR TRADITIONAL TRACK ONLY) – 12 hours prior to arrival of tropical storm force winds associated with tropical storm activity;
- Post-Storm Recovery – COTP will set once port conditions allow, after the storm has passed.

VESSELS: All commercial vessels shall follow the Heavy Weather Port Condition Matrix below. Of note, submitting a declaration will not guarantee the ability to remain in port but will give this office the ability to review the proposed request, provide situational awareness of what vessels will possibly remain in port for post storm accountability, and ensure facilities are aware of the vessels at their docks intending to remain in port. Following a storm's passing and once the port is re-opened, vessels will need to resubmit Notice of Arrival as per 33 Code of Federal Regulations Part 160 and this office will rescreen vessels prior to reentry. Post storm, vessels may also be required to fill out the “Vessel Post Storm Self-Assessment Checklist”.

FACILITIES: All regulated commercial facilities shall follow the Heavy Weather Port Condition Matrix (see sidebar). All containers, storage tanks, pallets, and other items/equipment that could create a risk/hazard in a high wind environment shall be secured as necessary in accordance with regulations, industry standards, and best practices. Waterfront facilities are encouraged to conduct pre-storm surveys and conduct post-storm emergency surveys of their docks as soon as practical if there is reason to believe that bottom conditions have changed. The surveys help determine whether water depths have been reduced and whether ship traffic is able to safely proceed. Post storm, facilities may be required to fill out the “Facility Post Storm Self-Assessment Checklist”.

Heavy Weather Port Condition Matrix		
Warning	Modified Track	Traditional Track
Heavy weather predicted for COTP Zone.	Certainty below 20% of any tropical storm conditions or any chance of only low intensity tropical storms.	Certainty above 20% of any tropical storm condition except low intensity tropical storms.
WARNING: - Vessels and Facilities are to take proper precautions for pending storm conditions.	Modified WHISKEY (72 hrs): -Initiate vessel and facility severe weather plans. -Regulated facilities submit Pre-Storm Checklist. -Commercial self-propelled vessels >500 GT submit "Declaration of Intent to Remain in Port".	WHISKEY (72 hrs): -Initiate vessel and facility severe weather plans. -Regulated facilities submit Pre-Storm Checklist. -Commercial self-propelled vessels >500 GT submit "Declaration of Intent to Remain in Port". -Ocean going vessels begin making plans for departure. -Port Closure (ZULU) expected 12 hours out from tropical storm conditions.
	Modified XRAY (48 hrs): -Any vessel requesting to remain in anchorage shall notify Vessel Traffic Service (VTS) of their intentions. -Smaller vessels shall seek shelter in preparation for possible port closure. -All containers stored near flood-prone areas should be moved.	XRAY (48 hrs): -Any vessel requesting to remain in anchorage shall notify Vessel Traffic Service (VTS) of their intentions. -Smaller vessels shall seek shelter in preparation for possible port closure. -All containers stored near flood-prone areas should be moved. -Port Closure (ZULU) expected 12 hours out from tropical storm conditions.
	Modified YANKEE (24 hrs): -Suspend all inbound transits. -Clear all vessels from Bolivar Anchorage. -Suspend bunkering and lightering. -Suspend all cargo transfers w/winds ≥ 40mph. -Disconnect transfer hoses/arms w/ winds ≥ 50mph. -Inland tows properly moored. -Regulated facilities shall secure or remove missile hazards, dangerous cargo and container and/or pallet stacks. -Regulated facilities should press up storage tanks to reduce wind damage.	YANKEE (24 hrs): -Suspend all inbound transits. -Clear all vessels from Bolivar Anchorage. -Suspend bunkering and lightering. -Suspend all cargo transfers w/ winds ≥ 40mph. -Disconnect transfer hoses/arms w/ winds ≥ 50mph. -Inland tows properly moored. -Regulated facilities shall secure or remove missile hazards, dangerous cargo and container and/or pallet stacks. -Regulated facilities shall press up storage tanks to reduce wind damage. -Port Closure (ZULU) expected 12 hours out from tropical storm conditions.
		ZULU (12 hrs): -Port Closed to all transits

This and all MSIBs are posted on Sector Houston-Galveston's Homeport page (<https://homeport.uscg.mil>) and emailed via the Sector Houston-Galveston GovDelivery distribution list. All documents (checklists, forms, etc) mentioned in this MSIB can be found on Sector Houston-Galveston's Homeport page under Local Contingency Plans. If you have any questions or concerns, please contact Sector Houston-Galveston at (281) 464-4800.



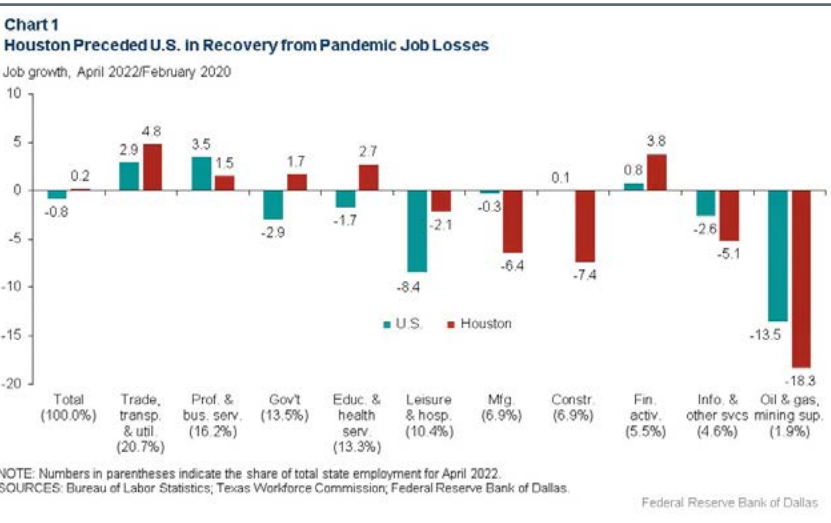
Houston Still an Energy Town, Largely Pins Growth on the Sector



The COVID-19 pandemic decimated the oil and gas sector, whose delayed recovery slowed the Houston area's growth relative to the rest of Texas and the nation through most of 2021. In recent months, increasing oil and gas demand and shifting geopolitics have become tailwinds for energy production and exports—as well as for Houston

At Houston's core, energy still rules. Two years after a COVID-19 lockdown helped collapse the energy sector and economic activity, historically high oil and gas prices and rising exports are propelling Houston ahead of the nation even as uncertainty and inflation erode the global economic outlook.

Some 25 months after the pandemic first struck, Houston has regained the 361,000 jobs that disappeared from February to April 2020. Texas employment was 2.5 percent above its prepandemic level. By comparison, U.S. payrolls were 0.8 percent below prepandemic levels.



Apart from energy, the local service sector also suffered in the collapse, accounting for 330,000 lost jobs. Leisure and hospitality alone (especially restaurants) shed 134,000 positions, while trade, transportation and utilities (notably retail); professional and business services; and education and health services together lost another 138,000 jobs. Meanwhile, goods-producing sectors dropped 41,000 positions, more than half involving construction.

Houston, led by the service sector, initially declined more slowly than the U.S.; local employment fell 11.2 percent from February to April 2020 versus 14.4 percent in the U.S. By comparison, declines in area goods-producing industries continued into 2021.

Early in the pandemic, the energy downturn weighed on Houston manufacturing and construction industries. The fabricated metals industry, which produces components used by the oil and gas sector, slowed. Oilfield machinery, pipeline and related equipment, making up a large share of local machinery manufacturing, weakened. Construction sank, in part because of project cancellations and delays related to oil and gas mining, pipelines and petrochemicals.

Service industries in Houston—retail and wholesale trade and transportation, education and health, government, and financial activities—had surpassed prepandemic employment levels by April 2022. Nationally, education and health and government employment still had shortfalls. Texas' decision to end pandemic restrictions on businesses earlier than most other states aided Houston's leisure and hospitality rebound.

Energy Still Important

The pandemic underscored that Houston, despite diversifying since the 1980s, remains deeply connected to oil and gas. The industry, with many of its biggest players headquartered in the metro area, accounts for more than one-third of Houston's economy—including mining and refining as well as sizable segments of transportation, construction, manufacturing and services.

Energy's direct share of the area's GDP has averaged 7 percent over the past decade—even though very little oil and gas is produced locally. Nondurable goods manufacturing, mostly refining and petrochemical output, accounted for 13 percent of GDP, while durable goods manufacturing tied to energy accounted for another 3–4 percent. There are also

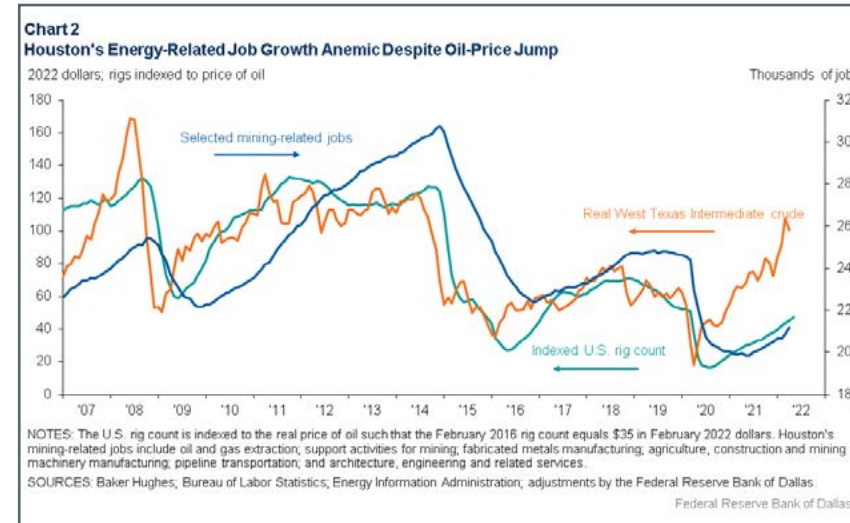
spillovers to other industries, such as construction and engineering and legal services, as well as indirect impacts of spending by energy sector employees.

Despite energy's large GDP impact, the employment share is relatively small. The industry is capital intensive, which means employment is relatively low but wages are high. From 2011 to 2020, it accounted for about 16 percent of Houston employment and 29 percent of wages paid.

Slow Shift to Growth

Even before the pandemic, U.S. fossil fuel producers struggled with poor rates of return on invested capital and dwindling access to funding. The 2020 oil demand collapse was devastating; global inventories of crude oil, gasoline and diesel swelled to historic levels and prices plummeted.

The West Texas Intermediate ("WTI") crude oil benchmark fell to negative \$37 on April 22, 2020, meaning that producers paid to get rid of inventories. Oilfield activity fell 70 percent, and production from existing wells was in many cases capped or choked because there was nowhere to deliver product. One in five oil and gas mining jobs in Houston had disappeared by August 2020, though employment in the broader energy industry didn't hit bottom until March 2021 (Chart 2). Bankruptcies surged.



As world economies began emerging from COVID-19 constraints in 2021, OPEC, Russia and other OPEC+ nations hewed to crude oil production growth limits; rising consumption drained oil stored from 2020. However, as inventories subsequently dwindled, OPEC+ producers couldn't restore output as quickly as promised and oil prices pushed higher.

U.S. drilling tends to follow oil prices, but the industry's response to rising real oil prices has been relatively lethargic since early 2021.

Before the pandemic, years of poor returns had sharply reduced access to capital from bond markets, banks and investors. The total return including reinvested dividends on Standard & Poor's ("S&P's") basket of exploration and production ("E&P") firms was negative 50 percent from December 2012 to December 2020. The return on the broad S&P 500 was 209 percent.

Separately, \$300 billion in energy debt was subject to bankruptcy proceedings in 2015 to 2021, according to the law firm Haynes and Boone. While some lenders abandoned energy, investors increasingly turned to alternative energy investments such as wind, solar and batteries.

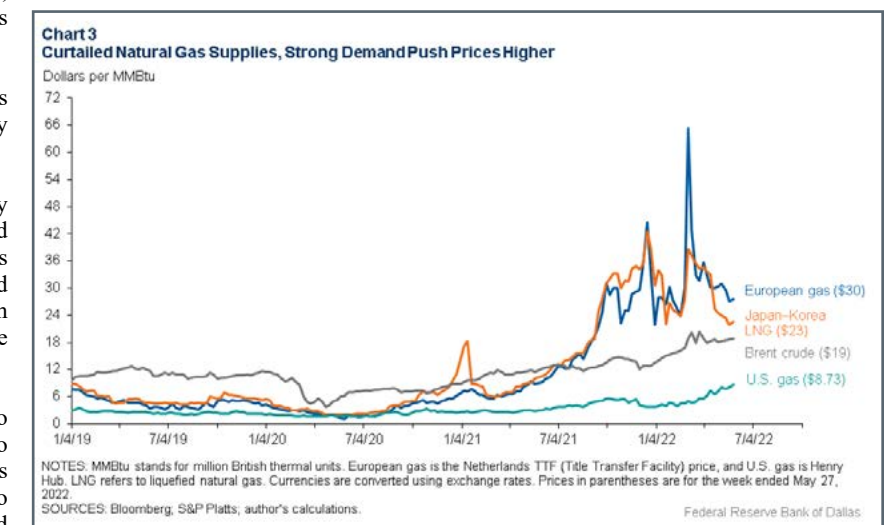
Oil producers leaned on thousands of uncompleted wells in 2021 left from the pandemic-related collapse—wells that were drilled but not yet brought into production. This reduced the need to spend on drilling new wells. By year end, rising real energy prices, the limited spending and large dividends turned energy stocks from the worst-performing to the best-performing sector in the S&P 500. The bankruptcy cycle came to an end, and energy companies could again borrow through the bond market.

Still, the industry continued to cite investor demands for capital discipline and only modestly boosted spending on drilling and production activity. The reticence to spend has coincided with surging input prices for steel pipe, sand and machinery along with supply-chain delays and a very tight labor market. Thus, oil prices exceeding \$100 per barrel may not generate the same level of stimulus for Houston as prior oil upturns would suggest even if elevated prices persist well past 2022, as currently expected.

Houston Exports Boom

Russia's invasion of Ukraine in late February 2022 came at a time when European natural gas inventories were at perilously low levels dating back to early 2021 as Russia slowed deliveries. (Europe is a major purchaser of Russian natural gas). The price of European gas rose from \$7 per million British thermal units ("MMBtu") at the start of 2021 to \$30 in October 2021 and surged to \$65 in the week following the invasion (Chart 3). Energy-hungry European buyers bid up liquefied natural gas ("LNG") prices all around the world, including in the U.S.

U.S. benchmark Henry Hub natural gas rose to nearly \$9 per MMBtu in May 2022 as moderate domestic supply growth met stronger domestic demand and growing LNG exports. A widening spread between U.S. and global energy benchmarks confers a cost advantage on U.S. firms with the capacity to export energy and energy-intensive products such as fuels and petrochemicals.



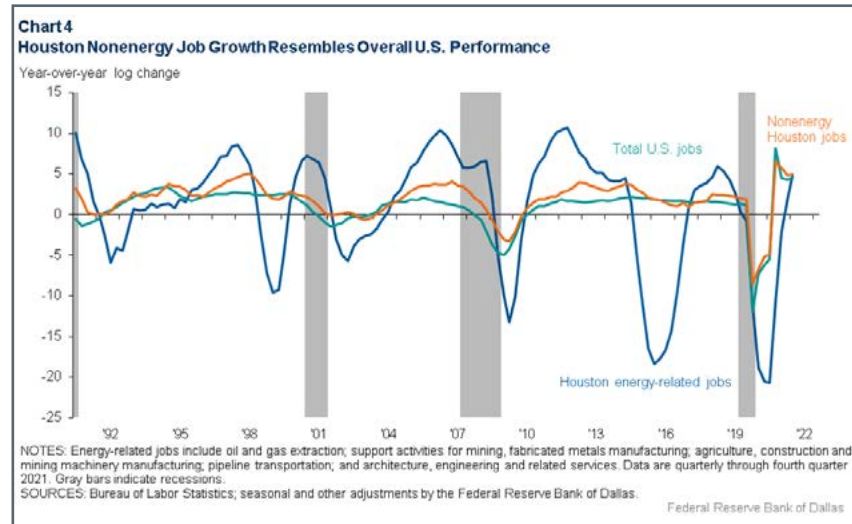
Surging global demand for energy products has driven Houston exports to record highs. Chemicals, petroleum products, crude oil and natural gas make up three-quarters of the value of exports from the Houston-Galveston customs district, which extends along the Texas coast from Galveston and the Houston Ship Channel to Corpus Christi.

In the near term, the price differentials for natural gas will support elevated petroleum chemical product exports—to the extent supply chains can accommodate them. Spurred by sanctions against Russia and a desire to speed the energy transition to more carbon-neutral fuels, nations are moving to diversify sources of natural gas while displacing coal as an energy source. This would favor new investments in LNG capacity along the Texas coast, boosting heavy construction, manufacturing, logistics and support services for several years.

U.S. Economic Drivers

Outside of its oil and gas booms and busts, the Houston economy tends to be more closely correlated with the national economy.

Employment in Houston's nonenergy sectors has grown at a 2 percent average annual pace over the past decade, while U.S. employment has expanded at a 1.3 percent rate. The area's nonenergy jobs had in aggregate fully recovered to prepandemic levels by March 2022; with its annual performance resembling the rest of Texas and rarely falling below U.S. growth rates.



Professional and business services, education and health services, and leisure and hospitality are major drivers apart from energy.

U.S. Economy Slowing

Energy-producing regions such as Texas tend to benefit from higher oil and gas prices, while most of the rest of the U.S. does not. At the

same time, U.S. economic slowing will diminish some of Houston's momentum.

The Blue-Chip Economic Indicators consensus of economic projections for the U.S. economy—an average of many forecasts—suggested in May 2022 that U.S. real (inflation-adjusted) GDP would slow from the 5.5 percent year-over-year rate in fourth quarter 2021 to 1.5 percent at year-end 2022. The latest forecast is sharply lower than the 2.9 percent 2022 growth anticipated in the February estimate.

Factors figuring in the reduction included a weak estimate of first-quarter GDP, rising interest rates, worsening supply-chain issues and inflationary pressures.

Rather than seeing Consumer Price Index (CPI) inflation slow from 7.0 percent in late 2021 to 3.3 percent in 2022, the consensus panel in its May projections anticipated inflation exceeding 6.0 percent between fourth quarter 2021 and fourth quarter 2022. Longer term, forecasters anticipated that inflation wouldn't fall into the Federal Reserve's target range of 2–2.5 percent until 2024.

Meanwhile, job forecasts have accelerated on stronger-than-expected job growth. The Survey of Professional Forecasters (SPF) projection for U.S. job growth in 2022 reached 2.8 percent from 2.6 percent. Similarly, the Dallas Fed's May projection for 2022 Texas job growth increased robustly to 3.7 percent from 3.0, in part because of higher energy prices. In both the U.S. and Texas, the pace of growth through year-end is likely to slow.

Houston to Outperform

The drag on consumers from high fuel prices is more than offset in Houston by spending in oil and gas and related sectors. However, energy firms' expenditures are expected to remain moderate compared with past episodes of high energy prices, limiting their impact. At the same time, exports of natural gas are likely to rise, supporting related investments for several years and giving Houston job growth a bit of a tailwind.

If recent projections for the U.S. prove accurate and energy prices remain elevated as anticipated, Houston payroll growth should outpace the national rate of 2.8 percent this year and could outpace the state. Thus, Houston should do well absent an unexpected, large increase in energy supplies, a negative demand shock such as a recession or a new, widespread COVID-19 outbreak.

Jesse Thompson

Senior business economist in the Houston Branch of the Federal Reserve Bank of Dallas.



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Port Watch

Crockett's Sockdolager



In the winter of 1827, Congressman Davy Crockett was descending the steps of the Capitol with several of his peers when he noticed a brilliant glow on the horizon. A fire was raging in Georgetown. Immediately, he and his fellow congressman raced to the scene and spent the night battling the inferno. When the blaze was finally subdued, Congressman Crockett was nearly moved to tears as he gazed upon the numerous families that had lost everything save the clothes on their back. He feared if nothing was done, women and children would not survive the bitter cold. That same week, the freshman congressman from Tennessee rallied his fellow representatives to pass a bill allocating \$20,000 to the victims of the Georgetown fire. It was a generous act intended to help those in distress.

Several months later, the renowned frontiersman departed Washington, D.C. for his congressional district to embark upon his reelection campaign. As he was riding through the fertile hills of western Tennessee, he greeted a constituent plowing a field and introduced himself. The farmer informed Colonel Crockett he knew who he was. He added that he had voted for the famed frontiersman in 1826 but that he would not vote for him again. Congressman Crockett was taken aback by the farmer's statement and asked why he wouldn't receive his vote.

The farmer simply replied, "You either do not understand the Constitution you swore to defend or you have no respect for it." Crockett was incredulous at this sockdolager and claimed he had no idea why the farmer would say that.

The farmer told Crockett that he had read that Crockett had voted to award \$20,000 to the victims of the Georgetown fire and forcefully explained his viewpoint on the matter.

When the farmer finished, a cowed Crockett asked him for his name. The farmer introduced himself as Horatio Bunce. Crockett knew he was one of the most respected citizens in his district. Thus, without Bunce's support, his reelection hopes would be dashed.

As the citizens of the United States celebrated the birthday of the nation's Declaration of Independence, the pace of commerce across Texas ports began its seasonal ebb. March, in typical fashion was the state's hightide mark in terms of total vessel arrivals. To that end, while June's state-wide arrival numbers were off for a third consecutive month, 2022's year-to-date eclipsed that of 2021 by 9%. The brownwater tow movements across the Houston Ship Channel exhibited the same pattern; albeit, this year's count exceeds that of last year by 16%.

On a month-over-month basis, the Port of Brownsville posted the heftiest of gains at 13% but lags last year's pace by 6%. 44% fewer chemical tankers were the primary culprit for this year's lackluster performance. Several score miles up the coast, Corpus Christi's vessel count peak unfolded in April rather than March and saw a 4% improvement over the last month. Corpus Christi's expansion efforts over the last few years continue to bear fruit with 2022's arrivals ahead of 2021 by 9%. Moving in the same direction, the Port of Freeport's growth trajectory continues unabated, year-over-year. Despite the most recent 7% monthly decline, 2022 is outpacing the prior year by 2%.

Galveston experienced a mighty wane over the last month with 22% fewer arrivals. This was primarily due to a lull in cruise ship activity. The good news is that cruising is returning to pre-COVID levels as reflected in the port's 8% uptick vis-à-vis the first half of last year. Texas City's 2022 arrival statistics are benefiting from the robust demand for petrochemical products. June's count was 1% above that of May's and the first six months of 2022 has seen 13% more vessel arrivals than that of the first two quarters of 2021.

On the former international border where the Sabine River flows, 2% fewer ships

called upon the port complex served by that waterway over the last month. Nonetheless, 13% more bluewater vessels have plied those same waters when compared to the first six months of 2021. LNG, LPG and petrochemical exports combined with a handsome jump in general cargo movements have contributed to 2022's trade bounty.

While the port of Houston cannot boast of double-digit year-over-year gains, it is also enjoying a more favorable trade picture over the last year. Specifically, undaunted by last month's 2% arrival decline, the port leads last year's arrival figures by 6%. This year, bulkers have taken top billing with a 31% year-over-year jump. LPG exports have not been as torrid as that of the bulker arrivals; however, a 15% increase is anything but paltry. Oceangoing tows nearly mirrored that of its brownwater brethren with a 15% year-to-date rise. The movement of refined products between U.S. ports has been in overdrive since the price of a barrel of oil entered triple-digit territory. Tankers – both of the oil and chemical type – are also up for the year 8% and 4% respectively.

Those of us who have been monitoring the wide swath of empty spaces at car dealerships will take little comfort in the fact that car carrier movements remain 13% below that

of 2021. One wonders if that ship will ever be righted given the non-transitory nature of inflation. Container vessels have posted the largest year-over-year percentage decline of all major ship categories that steam through Galveston Bay. No matter, the 2021 record TEU numbers will soon be overshadowed by the 2022 record TEU counts. At present, 20% more containers have passed across Houston's terminals with full imports leading the charge. Hopefully, barring a recession or some other pattern of economic malaise, fireworks will fill the sky to celebrate 2022's humbling of 2021's COVID-impacted trade performance.

Davy Crockett was so humbled by the wisdom of Farmer Bunce, he asked for a chance to address his neighbors. Horatio Bunce offered to host a BBQ to provide Crockett with such a chance. A week later, over 1000 people gathered at Bunce's farm to hear the Colonel's remarks. Crockett lauded Bunce for his civic mindedness and devotion to democracy. Not surprisingly, given his oratorical skills, Congressman Crockett had redeemed himself in the eyes of his constituents and coasted to a reelection victory in 1828.

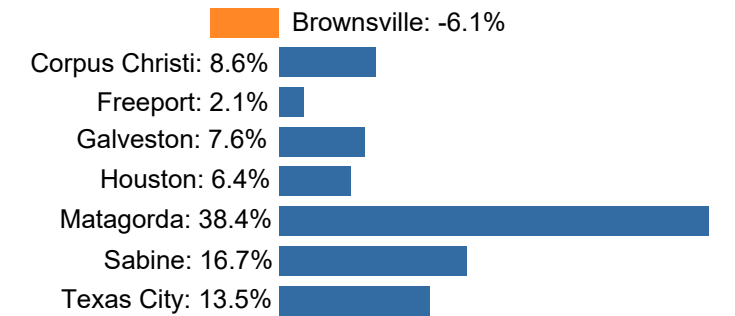
Unfortunately, several years later, "The Lion of the West" would eventually suffer

defeat in his bid to run on an anti-Jackson platform - in President Jackson's home state. At one point during his campaign for reelection in 1835, the famous Frontiersman lashed out at voters and declared if he lost, "you may all go to hell and I will go to Texas." Perhaps that may not have been the most astute campaign slogan given his loss. Consequently, true to his word, the individual that embodied the freedom of the west, headed to Texas and immersed himself in securing the independence of Mexico's stiff-necked province – Tejas. Alas, Crockett's frontier spirit proved no match for Santa Anna's troops at the Alamo as he suffered his greatest sockdolager.



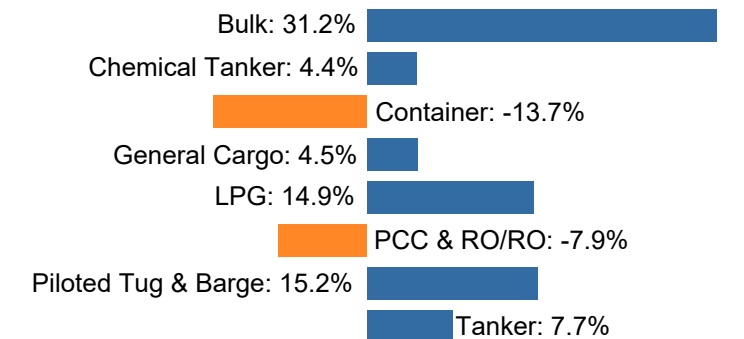
Tom Marian
Buffalo Marine Service
buffalomarine.com

Deepdraft Vessel Arrivals by Port Q2 Year-to-Date Percent Change



Source: Greater Houston Port Bureau Marine Exchange

Houston Deepdraft Arrivals by Type Q2 Year-to-Date Percent Change



Source: Greater Houston Port Bureau Marine Exchange



Strong Jones Act, Strong Texas

Photo courtesy of Buffalo Marine Services, Inc.

In June, we celebrate the anniversary of the enactment of the Jones Act, the federal law requiring that vessels moving cargo between U.S. ports be American-owned, American-built, American-crewed. As the foundational law of American maritime, the Jones Act is critical to a strong, thriving domestic maritime industry in Texas and nationwide, making it a vital component of Texas's prosperity and our nation's security.

Texas is one of the most important maritime states in America, home to hundreds of miles of coastline and navigable rivers and over 56,000 domestic maritime industry jobs, the third highest number in the nation. American maritime, which contributes over \$14 billion annually to Texas's economy, is integral to the strength of the Lone Star state. The tugboat, towboat and barge industry – the largest segment of American maritime – is a dynamic presence in Texas and across America, moving nearly 700 million tons of cargo annually nationwide and consisting of companies of all sizes and operational sectors, including multi-generation family-owned businesses. These companies provide family-wage careers and opportunities for upward mobility to mariners from all walks of life, including recent high school graduates and military veterans.

The men and women navigating Texas waterways onboard Jones Act vessels are indispensable parts of the marine transportation system that moves Texas energy safely, efficiently and sustainably. Nearly 50 million tons of petroleum products and more than 11 million tons of crude petroleum are moved on Texas waterways every year, and as the state expands its liquefied natural gas sector, the tugboat, towboat and barge industry stands ready with harbor tugs to provide ship assist and state-of-the-art bunker barges to support this growing market. Texas is an energy leader because of marine transportation, but without the Jones Act to ensure a robust American maritime industry, Americans would have to rely on foreign vessel owners and crews to transport these critical fuels, putting our energy security at risk.

The Jones Act also ensures that American mariners working aboard American vessels will help build our nation's emerging offshore wind industry, which is poised for exponential growth in the years ahead. This means tremendous opportunity for Texans, as Texas maritime companies are already becoming a major force in helping harness this important new energy resource.



Photo courtesy of Great Lakes Dredge & Dock Company

Houston-based Great Lakes Dredge & Dock Company, LLC, the nation's largest provider of dredging services, will build and operate the first U.S.-flagged inclined fallpipe vessel for subsea rock installation, supporting the development of the Empire I and II wind farms offshore New York.



Photo courtesy of Kirby Offshore Wind

Kirby Offshore Wind, a subsidiary of Kirby Corp., has entered into a 20-year agreement with Maersk to provide barge transportation services for offshore wind towers and turbines to build out Empire Offshore Wind; and Shipbuilder Keppel AmFELS is building the first U.S.-flag wind turbine installation vessel at its shipyard in Brownsville for Dominion Energy.



Photo courtesy of Coopers/Ports America, LLC

Whether moving liquid fuel safely on the waterways, or helping lay the foundation – sometimes literally – for offshore wind’s emergence nationally, Texas maritime is at the forefront of America’s energy landscape. And it is the Jones Act that undergirds these investments and the jobs they generate, and ensures they are not outsourced to foreign interests.

The Jones Act is not only critical to the development and flow of energy in Texas and across the United States, but to the integrity of the entire American supply chain. As other modes of freight transportation and the international maritime industry struggled to keep cargo moving during the supply chain crises of the past two years, domestic maritime has continued to safely and efficiently deliver the commodities that build our infrastructure, drive our economy and sustain our way of life. When cargo containers languished at port, tugboats stood ready around the clock to move ships into and out of port at a moment’s notice. When the trucking industry had to grapple with finding enough drivers to meet demand, towboats pushed barges heavy with Texas products through the day and night.

How much worse could our energy and supply chain challenges have been during the past two years – and how much worse would things be today – if America’s domestic maritime commerce was in any way dependent on foreign vessels and crews? Thanks to the Jones Act, we didn’t have to find out. In fact, the American maritime industry has been one of the few stabilizing forces throughout these crises.

Our national and homeland security also depend on a strong domestic maritime industry safeguarded by the Jones Act. Tugboat, towboat and barge companies in Texas and across the country play a critical role in our nation’s military readiness by transporting vital cargo for our military along our coasts and on our inland waterways and by providing ship-assist services to aircraft carriers, hospital ships and other military vessels entering and leaving our nation’s ports. Domestic maritime provides the nation with a capable, reliable pool of well-trained American mariners to support sealift operations for our armed forces during war or national

emergency, and shipyards in Texas and across America build the vessels that the Navy and Coast Guard require to defend our national interests.

The Jones Act not only ensures the continued vitality and reliability of this entire key industrial base, but also provides crucial aid to the Coast Guard in executing its homeland security mission. Without this law, the Coast Guard’s mission would be made vastly more complicated by having to track and vet foreign vessels and crews on our domestic waterways, along which much of our nation’s critical infrastructure is located. Meanwhile, American mariners act as a reliable source of situational awareness for the Coast Guard by serving as eyes and ears on the water.

The Russian invasion of Ukraine is just the latest, brutal reminder that we live in a turbulent world with constant potential for disruption and uncertainty, where countries or non-state actors can act in unpredictable or adversarial ways that threaten our national interests – whether the physical security of the U.S. or our allies, or the financial or energy markets on which we all depend – and where natural disasters can strike at any time, from severe weather events to global pandemics.

In this environment of constant potential for disruption, Texas and the entire country need a domestic maritime industry that we can count on without question. The Jones Act provides the legal foundation for that certainty.



Jennifer A. Carpenter
President & CEO
The American Waterways Operators
americanwaterways.com



HONORING THE 2022 MARITIME LEADER OF THE YEAR



RIC CAMPO
COMMISSION CHAIRMAN, PORT HOUSTON

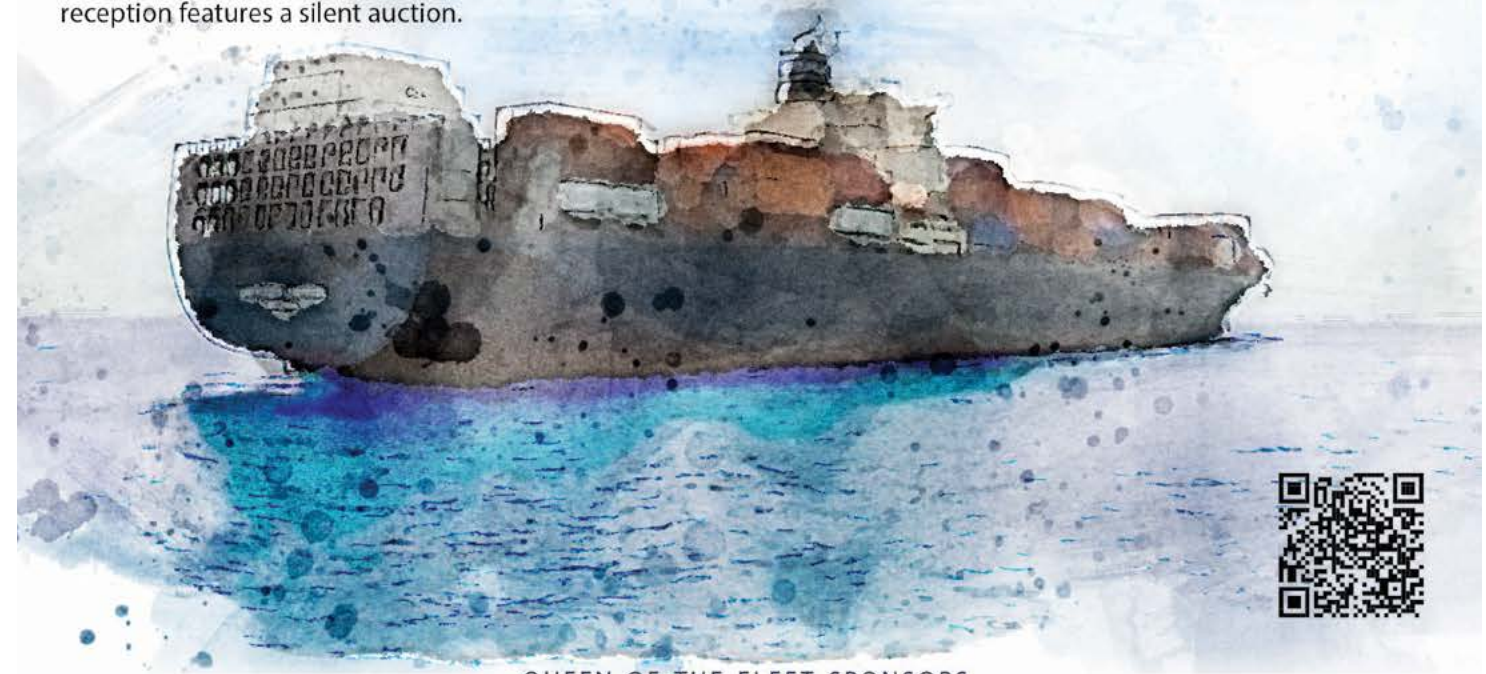
Saturday, August 20, 2022
Tickets at txgulf.org/annual-dinner

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The Annual Maritime Dinner is one of the largest maritime formal business events in the U.S. with over 700 attendees, bringing together maritime, transportation, and industry professionals and their guests to recognize the Maritime Leader of the Year.

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Texas Mooring Optimizes Operations With PilotTracker

About Texas Mooring LLC

Texas Mooring LLC was founded in 1985 to provide line handling personnel and equipment to facilitate the mooring and line shifting requirements of ships and sea-going barges in the port of Houston, Texas.

As dispatchers, they schedule line handlers to meet vessels upon arrival or at the departure of a dock, facilitate the shifting of vessels at a dock or between docks, and monitor all stakeholder resources to ensure there are no unexpected changes. If there are, they contact the appropriate contacts to facilitate information flow and decision-making between the appropriate parties.

Challenges

To perform their daily operations, Texas Mooring heavily relied on two different systems – one to track a vessel’s movement and a secondary system to identify and validate the vessel’s operator. The process of logging into two different systems every time they had to research a vessel was very difficult and time-consuming.

Solution & Results

At the end of 2021, Texas Mooring was introduced to PilotTracker - a one-stop-shop for all viable information regarding a vessel coming into the port.

PilotTracker provides a dynamic map powered by AIS data to assist in tracking the vessel, as well as detailed information about each vessel including the current operator. The platform also offers email notifications that are triggered when a pilot is on board for any specific movement.

The dispatchers utilize PilotTracker 24/7 for their operational success as the information provided is a must-have to be efficient and successful in their sector. As line handling dispatchers, the two parts of the system they use the most are the schedule portion of PilotTracker and the underway tab. These allow them close to real-time visibility of ships for which they are responsible, with all job-pertinent data available from a single source. They will continue to discover more benefits as they continue to utilize the system and as the Greater Houston Port Bureau, together with PortXchange, continues to implement changes based on industry feedback.

Both dispatchers and executives, who use the system regularly, have acknowledged that PilotTracker improves productivity and helps significantly reduce time by providing all relevant information in a single place.

Change is always a perilous path to go down, especially if you utilize a system that you are used to, and it gets you by. However, the pace of the industry and maritime responsibilities continues to increase. To remain viable, any efficiencies that can be obtained to minimize the informational tools necessary to perform key work functions are well worth the effort of learning something new. We can attest to the value added to our organization by this system.

"We would absolutely recommend the PilotTracker system to anyone who is interested simply, because all important information can be found on one single page, including a very accurate map", says the Texas Mooring dispatch team.





Looking at 2022 Trends in Building Resilient Port Infrastructure

Collaboration, digitization, and culture change are the keys to unlocking more sustainable and efficient infrastructure.

At Dow, we're guided by our purpose: To deliver a sustainable future for the world through our materials science expertise and collaboration with our partners. Dow's ambition is to be the most innovative, customer-centric, inclusive and sustainable materials science company in the world.



What is Infrastructure?

Ports are where complex land-based manufacturing, storage, and modal operations meet equally complex marine operations. Because of the broad range of stakeholders and assets involved, the definition of infrastructure can vary. In general terms, a typical port infrastructure plan includes things like:

- Channel expansions
- Container yard expansions
- Cranes
- Jetties
- Safety and security assets
- and other intermodal investments

These types of infrastructure have been (and continue to be) vital to efficient, secure, and sustainable supply chains. However, the landscape is changing. As we look to the future, digital operations and climate change are going to expand the historical definitions and prioritization decisions related to port infrastructure. More on that in a minute...

Infrastructure Cost

Port infrastructure is vital to sustainable and efficient operations, but it comes at a cost. In 2021, the American Society of Civil Engineers ("ASCE") estimated that ports and port tenants plan to spend \$163 billion between 2021 and 2025 on infrastructure. This investment figure is up by over \$8 billion from the previous four years.

The American Association of Port Authorities ("AAPA") estimates 34% of ports will make rail investments of over \$50 million in the next ten years. Further, nearly 80 percent of AAPA U.S. ports anticipate a minimum of \$10 million investment being needed in their ports' intermodal connectors through 2025, and 30 percent expect to need at least \$100 million of investments in connectors.

More specific to the Houston area, in recent decades the Port of Houston Authority has invested \$500 million on various channel-related projects, including dredging and beneficial use/environmental restoration projects, and will add another \$550MM for Project 11 through 2025. \$150 million has been invested in truck gates, \$100 million in safety and security, and another two billion on yards, wharves, roads, and other development. Moving forward, at least one billion in additional capital will be required every 5 years as well.

Despite these significant collective expenditures, the 2021 ASCE Infrastructure Report Card still rated ports nationally at a B-. Because a port's success also relies on infrastructure outside its port gates, it is also important to consider modal operations that connect goods to the port. The same ASCE report rated:

- Inland waterways infrastructure: D+
- Roads: D, whereby only 9% of intermodal connections rated as in "good" or "very good" condition.
- Rail: B

Finding the needed infrastructure funding gets more challenging over time because infrastructure continues to get more expensive. Below are a couple key reasons:

- Tomorrow's infrastructure project must "one-up" the previous project not only in size, but also in terms of safety, security, and sustainability. When projects upscale, they get more complex, take longer to construct, require more advanced technology, and get more expensive to maintain over time.
- Land is a finite resource. As a port area is built out, useable land becomes more limited and thereby more expensive. Further, new projects interact with existing infrastructure more often, and there is an increasing need to work in closer proximity to communities. The margin for error gets smaller, and the cost to plan, construct and maintain increases.

SELECT CAPITAL PROJECTS

Port Houston will continue to modernize and expand its facilities by strategically investing in capital projects. These projects will enhance its waterway, terminal, industrial property, road, and rail infrastructure to create an efficient, productive, and cost-effective system to move freight through the supply chain and to support growth. In 2020, Port Houston was awarded more than \$100 million in federal grants for the redevelopment and advancement of its facilities.

PLANNED (SHORT-TERM, 2021-2025)

- HSC Expansion-Project 11
- Dredged material placement area improvements
- Barbours Cut Terminal Wharf 4 rehabilitation
- Barbours Cut Terminal Container Yards 3 and 4 rehabilitation
- Bayport Terminal Wharves 6 and 7 construction
- Bayport Port Road expansion and drainage
- Bayport Complex development
- Next-Generation Enterprise Resource Planning (ERP) platform
- Multipurpose facilities maintenance and select upgrades



PROBABLE (MID-TERM, 2026-2030)

- Beltway 8 property development
- Barbours Cut Terminal Wharf 5 rehabilitation
- Barbours Cut Terminal Wharf 6 rehabilitation
- Barbours Cut Terminal Container Yards 5, 6, and 7 rehabilitation
- Bayport Terminal Wharf 1 and east-end construction
- Bayport Auto Terminal conversion
- East Industrial Park Wharves 33-34 rehabilitation
- Jacintoport Terminal Wharf 1 rehabilitation
- Bayport Intermodal Yard Improvements

POSSIBLE (LONG-TERM, 2031-2040)

- HSC Expansion-Project 12
- New coastal terminal
- Inland intermodal terminal
- Pelican Island development
- Alternative freight transportation
- Barbours Cut Terminal west-end redevelopment
- Bayport Terminal Wharves 8 and 9 construction
- Turning Basin Terminal revitalization
- New layberth facilities

\$1.1 BILLION

\$2+ BILLION

Graphic courtesy of Port of Houston Authority

Funding for infrastructure projects is derived from variety of sources: federal, state, local, and the private sector. This funding, however, does not always keep pace with the need. More and more projects seek local funding options to supplement federal/port authority funding and speed up construction times. Two current examples of this trend are evident in Houston's Project 11 and the Sabine Neches Deepening project. In both cases, local funding options are being actioned to scale the respective projects and speed construction to meet the pace of projected regional growth. In short, infrastructure is expensive, the price tag continues to rise, and the funding gets more challenging.

Environmental, Social and Governance Factors

Performing operations in a safe and efficient way has been ingrained in industrial culture for some time. Still, the increasing focus on environmental, social, and (corporate) governance ("ESG") issues will increasingly shape the infrastructure conversation. Customers, employees, and communities are demanding safer, socially aware operations with lower carbon footprints. More and more companies are responding by establishing "net-zero" goals (21% of the world's largest 2,000 public companies have made net-zero commitments). These companies will advocate for greener policy/regulation and will increasingly select greener logistics service suppliers to advance their carbon reduction goals.

Regulations to dramatically reduce emissions are coming quickly. Achieving these ambitious goals will require investment in new technologies, new fuels, and new infrastructure. Research by the Getting to Zero Coalition estimates that the scale of cumulative investment needed between 2030 and 2050, is approximately \$0.8 to \$1.2 trillion (50% reduction) or \$1.2 and \$1.6 trillion (100% reduction).

While ships are being designed more efficiently, there is a limit to the traditional technologies (i.e. new propeller designs, better hull design, solar panels, wind assist, shore power, etc.). The current IMO 50% CO2 reduction by 2050 emissions reduction cannot be achieved without carbon-neutral or zero-carbon fuels.

Determining the fuels of the future, developing adequate fuel production, and facilitating their distribution is a massive challenge. According to the Getting to Zero Coalition study, 87% of the total investment will be on land-side low-carbon fuel infrastructure and production facilities. Storage and bunkering infrastructure account for half of this investment. Add in things like port electrification, carbon capture, green energy production, and it becomes increasing clear that these new initiatives will squeeze funding typically earmarked for traditional infrastructure projects.

Climate change mitigation will further influence infrastructure decisions in other ways. Increasingly, coastal areas are looking for infrastructure solutions to protect them from sea level rise and increasing severe storm events. An example of this is the Coastal Protection Plan (Coastal Texas Hub (arcgis.com) project being proposed to protect the Galveston Bay/Houston Ship Channel area (~30 Billion USD). This mammoth project, and the other similar projects that are almost certain to appear in other coastal communities, will challenge the funding sources of traditional infrastructure projects further.

In addition to this massive cost, these sorts of sea barrier type projects will force important long-term infrastructure decisions. In the case of the Coastal Protection Plan project, a key storm surge protection feature is a ship gate built across the mouth of the Houston Ship Channel (the busiest navigational intersection in the western hemisphere). The size and design of these gates will influence/define the traffic patterns and max ship sizes in the Houston area for the next 50 to 100 years. When we collectively decide to build these projects, it is critical that we get them right.

What's the Plan?

With all these headwinds, how do we continue to grow our respective businesses in a sustainable way?

First, we need to find a way to use current infrastructure more efficiently. For that, all roads lead to digital. Port operations have reached the point of scale and complexity that achieving new breakthroughs in efficiency will not be possible without responsible and accurate real-time data sharing/optimization across the port ecosystem. Digitizing port operations is no longer a "nice to have" option; it's an imperative.

Issues such as production units shutting down and rail/truck congestion can mean that product is not available when a ship arrives. In other words, situations that are totally land-based can completely undo the

most skilled marine planning and vice versa. It's not enough to optimize port and/or modal operations in a silo. To thread the needle, we must responsibly share data up and down the supply chain to optimize the port as an end-to-end logistics system.

Advances in artificial intelligence, machine learning, and other digital technologies hold great promise in helping us identify where the true bottlenecks are and enable us to act quicker and more appropriately when things go awry. Our global competition is digitizing rapidly and adopting these technologies is necessary to stay competitive.

Digitization can also deliver the data and the visibility needed to identify and prioritize infrastructure projects with the best overall triple bottom line across the port's diverse group of stakeholders. With increasingly finite resources, every project worth doing must tick the service, cost, and sustainability boxes.

Further, with the intense competition for funding, our advocacy efforts must be better coordinated than ever before. Companies, organizations, trade officials, and state officials need to find ways to improve alignment so the message that gets to Congress is well-aligned, laser-focused, and backed with compelling data.

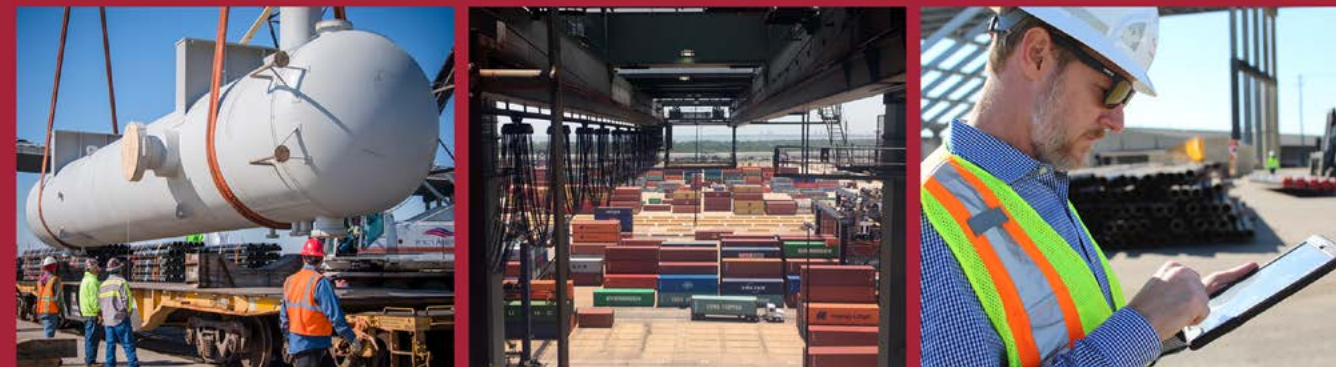
Funding will need to get more creative as well. Every crease and crevice of state and federal funding will need to be explored, and sparingly, where the value proposition supports it, we will also need to look for local and

regional funding mechanisms to ensure the port region stays relevant and competitive. Again, to get local or regional taxpayers on board, we need the data!

In summary, infrastructure complexity and cost will continue to increase, and funding will continue to be a challenge. ESG and climate change will demand new forms of infrastructure. The most desirable projects will be those that can deliver benefits in each of the cost, service, and sustainability triple bottom line categories. Digitization and advanced analytics are powerful tools that can help us better utilize existing infrastructure and identify optimal projects for our investment dollars. Most importantly, collaboration and culture change are essential to future operational and infrastructure success.



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2022 MARITIME LEADER OF THE YEAR

Ric Campo

Chairman, Port Commission



Ric Campo, chairman of the Port Commission of the Port of Houston Authority (“Port Houston”), has been named the 2022 Maritime Leader of the Year. Campo will be honored at the Port Bureau’s Annual Maritime Dinner on August 20, 2022. The Port Bureau Board of Directors named Campo as the 2022 honoree for his steadfast commitment to improving the greater Houston port region.

Campo was appointed as chairman of the Port Commission in January 2019 by the City of Houston and Harris County Commissioners Court. Since his appointment, Campo has dedicated his efforts to working with industry and the community to forward Houston Ship Channel and port improvements, balancing economic growth and environmentally sustainable initiatives. Project 11, the widening and deepening of the Houston Ship Channel, further ensures continued economic prosperity and job growth for the region.



You are a self-made person. What experiences and lessons played a vital role in getting you to where you are today? What advice would you give to the younger generation?

My grandparents were Spanish immigrants. I was the first one in my family to go to college, graduating in accounting at Oregon State University in 1976. While attending college, I joined the Sigma Chi fraternity. I earned money to pay for my tuition and living expenses by cooking for the fraternity on weekends, earning \$15 per meal. I also added a “Coke machine” where I replaced Coke with beer in the basement of the fraternity house. I learned to work hard, have a strong work ethic and entrepreneurial spirit - be a catalyst, a problem solver, and to create value for myself and others. My advice to the younger generation is three things that you are in control of:

1. Work harder than everyone else, be the “go-to-person” for everything.
2. Invest in yourself. Never stop learning, reinvent yourself and adapt to the always changing environment.
3. Take risks. It’s easy to stay in your comfort zone. Get out of your comfort zone and try new things. When people get comfortable in their career, they may find themselves out of a job when the world changes around them.



Ric, Mo, and friends in 1975 at Oregon State University.



Ric in 1972 as a freshman at Oregon State University

Was there a person or an event that greatly impacted you when you were in school or a young professional?

My father, Richard Campo, had a big impact on me. He had an entrepreneurial spirit, adapting to new adventures. However, my father was impatient, made mistakes, and didn’t focus on understanding the business or long-term development, and lived from deal to deal. His weaknesses taught me to be patient, learn the business inside and out, focus on long-term development, and never stop learning. College gives you the tools to think, and you should apply those skills to problem solving. You need to create long-term value and learn for the future. Another key person that impacted me was Kenneth Schnitzer, chairman of Century Development Corp in my first job, who was a great mentor for marketing. He was an incredible marketing person that could sell anything to anyone.



Left: Ric’s parents Joan and Ric Campo. Right: Brothers Dan, Tom and Ric in 1961.



You were born/raised in California and Nevada and graduated from Oregon State University. You moved to Houston when your father opened a restaurant here. Why did you choose real estate?



Ric and his Camden Property Trust board at the New York Stock Exchange.

In 1976 I moved to Houston, following my father who was opening a Houston restaurant. Within three months his restaurant business failed. It was great for me; I learned that I didn't want to be in the restaurant business. I had the opportunity to go into oil and gas or the real estate business. I choose real estate because I thought it would be fun to build.

Not knowing anyone in Houston, I got my first real job at Century Development as a staff accountant. The Houston economy was booming. For the first five years of my career, Houston was the best market in America. During the next five years, the Houston economy was the worst in America as a result of the energy bust. Century built three high-rise condominiums that opened to an awful market. Keith Oden, the cofounder of Camden, and I started a division to convert the condos into rentals while the for-sale market recovered. Our division was very profitable which led Keith and I to buy our division that ultimately became Camden. We had a contest to name our new company and two long-term employees, Jeannine Henry and Jean Harding both who are still at Camden, combined the first 3 letters of my name and the last three letters of Oden's to create Camden. We took Camden public on the NYSE in 1993 with a \$200 million market value. Today, Camden is a S&P 500 company with a market value of \$20 billion - a great Houston startup success story originally funded by Houstonians. Camden is engaged in the ownership, management, development, redevelopment, acquisition, and construction of multifamily apartment communities with a national footprint. Camden is the only job I've had in 46 years in Houston; Keith is the less stable part of our Camden team having had two jobs!

I remember, years ago, when someone at Century once came down the hall and asked if anyone in the accounting department could do a pro forma for an office building. I raised my hand and said I could. I'd never done one. It's important to have confidence that you can do something and go figure it out: "Fake it till you make it". The pro forma worked fine. Real Estate is fun. Everyone needs a place to live, and I get to build great buildings. My accounting experience helped me understand the dynamics of business and how they work. Getting up to speed on Port Houston was pretty easy for me. Accounting is the language of business which helps anyone understand capital, revenue, expenses, and how it all works. [Ric still has his CPA license today.]

You've been quoted many times as saying company culture is important and that employees should have fun. What key lessons have you learned in creating a company culture?

Keith and I grew up in a "Pirate Ship Culture" - no collaboration and people were in it for their own gain. You try to knock down people to gain more. We wanted to build a culture that was collaborative, fun, and an environment where people wanted to come to work. It took time to build. You must be process-oriented, not deal oriented. Peter Drucker said: "Culture eats strategy for breakfast" - meaning a powerful and empowering culture is a sure route to organizational success. The reason Camden has grown and thrived is that we grew our human intellectual capital, and we created opportunity for employees in the company. We created value for all employees.

Early in my career I asked a mentor: How do you get started investing in real estate? His reply: You go borrow a \$1 million to invest. I didn't have the money, and nobody would lend us money in the beginning. Ten years later this same mentor told me: You need to mature. You shouldn't measure your success by your bank account but measure it by how many jobs you create and how many families you support. When an employee once asked me if it made me nervous to be responsible for all of my employees, I realized it wasn't about me making money but people being able to work, pay rent, etc. Camden provides more than 1,650 jobs and has been recognized as one of the 100 Best Companies to Work For® by FORTUNE magazine for 15 consecutive years. In 2021, Camden also ranked as a Best Workplace for Millennials™ and Women™ and the company was named to the PEOPLE Companies that Care® list. Camden was also ranked 29th in Best Workplace in Texas™ in 2021.

We do a lot of skits to communicate in a fun way with team members at Camden. Most cultural business issues usually are due to a lack of communication: what's going on in the company, how do I know where I fit, how do I feel about it, etc. We bring people together by sharing our experiences and showing our vulnerability, letting them know they are on the same playing field as their leaders. I once dressed up as Dolly Parton, and recently as "Donny" from Donny & Marie. I sang "A Little Bit Rock and Roll" while Keith sang "A Little Bit Country" in front of 500 employees. We create shared experiences that are fun and memorable. [Note: Ric has taken singing and dancing lessons for these events!]



Ric, his son Richard, and Toby Mills Camden VP of construction on top of Camden Downtown Houston in 2019,

What interested you in serving on the port commission when you knew little about ports when you came onboard? How have you seen the port of Houston change? And what do you see in the future for the port?

I was recruited by Mayor Turner and the new County Judge Lina Hidalgo. Serving on the port commission wasn't on my radar even I though I've known many commissioners over the years. I knew the port generally, as I've been selling "Houston" for a long time. There are three economic drivers in Houston: upstream and downstream energy business, the port, and the medical center. I knew the port was a big economic engine, but I didn't know the details. In late 2018, the appointing bodies were looking for someone to serve as chair of the port commission that would be able to provide a new perspective, had large capital project experience, and had problem-solving capabilities. I asked Keith Oden for advice (Keith and his family had worked in/out of the port for years). He said it was a huge and amazing civic opportunity for me. I studied the port's financial statements - what a business! Port Houston generates \$339 billion of total economic value to the state - 20.6% of Texas GDP and supports 1,350,695 jobs.

Because I've been involved in civic work for over 25 years, this was an interesting opportunity to consider. I like to build things, i.e., Minute Maid Park, NRG, Toyota Center, etc. When I look at civic projects, it is all about creating jobs, and supporting future growth. The port was in the fourth year of the study for Project 11- the deepening and widening of the channel. It was an opportunity for me to help move the project forward. The \$1 billion Project 11 is a game changer for our region positioning our port for continuing growth.



Ric and Roger Guenther, Port Houston, at the Bayport terminal.

It's 2030. Describe how you see the energy transition/evolution and does today's 72% petrochemical cargo change?

We are at the beginning of the energy transition to cleaner fuels, and we need to adapt to the environment. We need to be out in front of the change and make investments now to be the clean energy capital of the world. We have the technology, companies, and the capital to make it happen. It's our responsibility to the future generations to make the environment cleaner and invest in the technologies that will drive us into the future. If we transition and make the investments, we can gain 600,000 jobs rather than losing jobs. We need to adapt, or we will be left behind. Technology will become more efficient. We need to invest to retrain people that are displaced by change, so our industry doesn't leave people behind like what happened in the auto industry. We will still need gasoline for the next 20+ years, but we need to invest now for the future. The Ion Houston, Green Labs, etc., are large incubators in Houston that are working and driven by the energy transition issues. Houston raised \$220 million in venture and startup capital five years ago. Today we have \$2.5 billion in investment capital and that doesn't include the private companies spending their own dollars on energy transitions projects.

Of all the honors you have received, which honor has meant the most to you and why? What life legacy do you hope to leave your children and grandchildren?



Family portrait of Ric, wife Mo, daughters Jenn and Kim and son Richard.

The success of my family is my biggest and most important accomplishment. My wife Mo has been my most important partner. We have six grandkids and one on the way. All my three kids, Jenn, Kim, and Richard, are doing great and contributing to their communities. It's an honor and responsibility for me to make sure they are all responsible citizens. From the business perspective, I'm proud of Camden being named on the 100 Best Companies to Work For® by FORTUNE magazine for 15 years, seven of those years in top ten, showing we built a great company that people like to work for, creating value for our teammates and our customers.

These accomplishments reinforce that Camden exists to improve the quality of the lives of our teammates, customers, and our stakeholders one experience at a time. We improve teammates lives by providing great jobs, upward mobility, fair equal pay, and a great environment to work. We improve our customers lives by providing homes where they create their most important memories. We improve our stakeholders lives by investing their hard-earned money in our apartments and teams and producing excellent investment returns for them to use for retirement, pay medical bills, and more. When we put smiles on our teammate's and customers faces, smiles always appear on our stakeholder's faces!



Ric and granddaughter Willie (Wilhelmina).



Ric and grandson Tennyson.

Live a great life.

Do good things for your family and community..It's a short life.

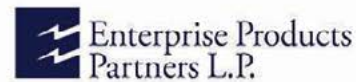


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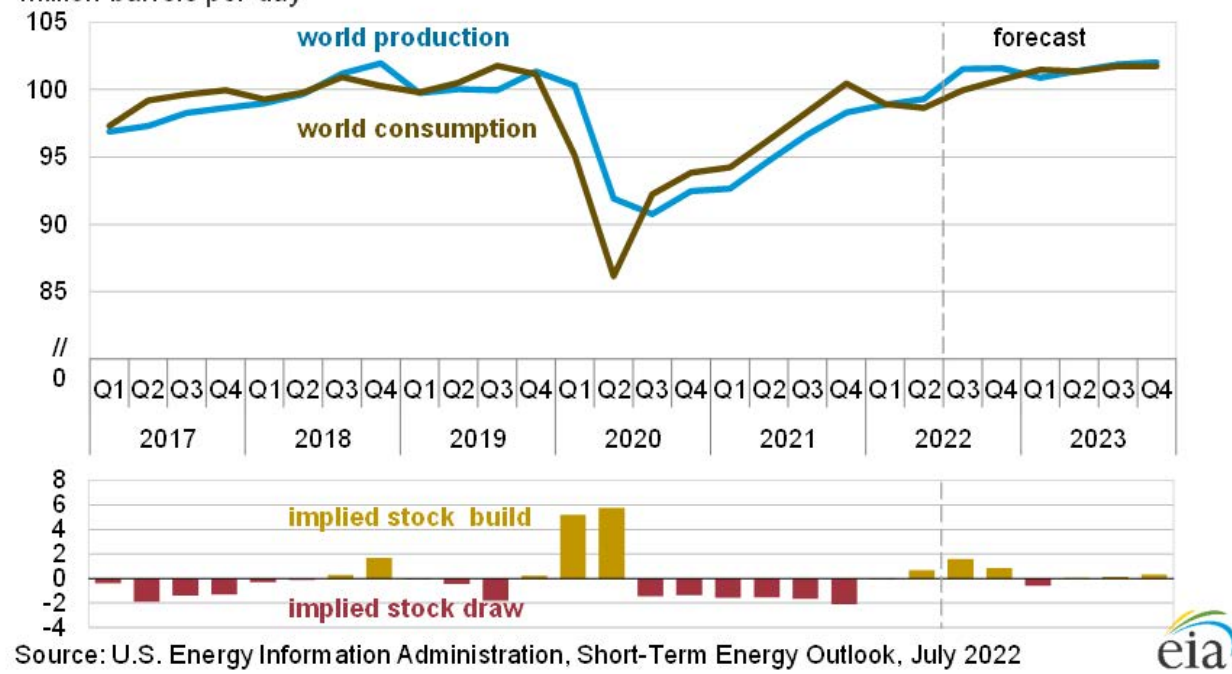
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EIA: July Short-Term Energy Outlook

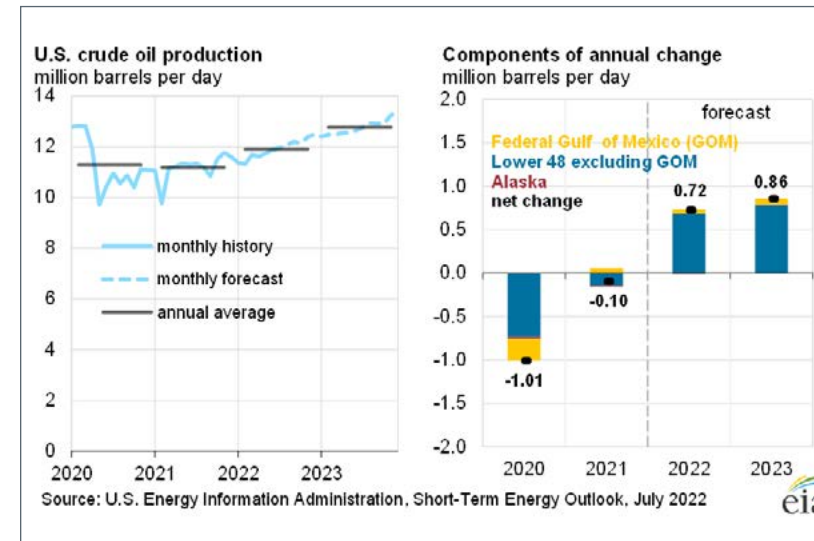
Forecast Highlights

The July Short-Term Energy Outlook (“STEO”) from the U.S. Energy Information Administration (“EIA”) is subject to heightened uncertainty resulting from a variety of factors, including Russia’s full-scale invasion of Ukraine. The possibility of economic activity being less robust than assumed in the EIA forecast could result in lower-than-forecast energy consumption. Factors driving uncertainty about energy supply include how sanctions affect Russia’s oil production, the production decisions of OPEC+, and the rate at which U.S. oil and natural gas production rises.

World liquid fuels production and consumption balance



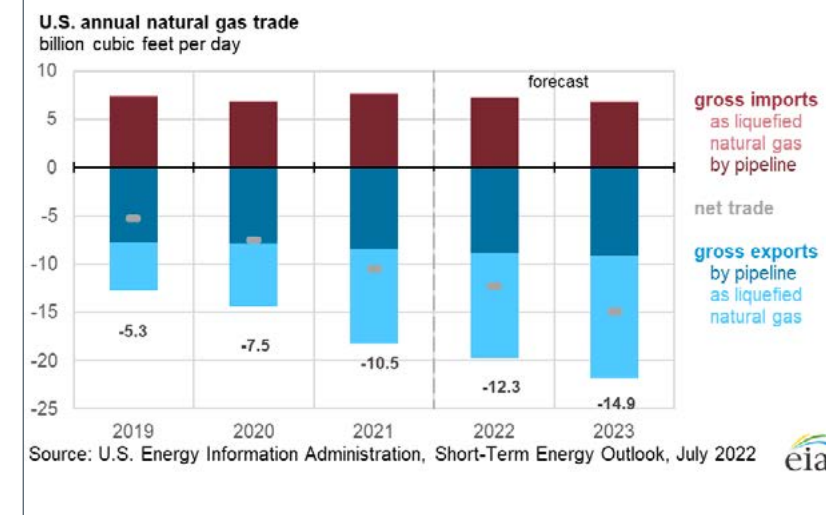
Global Liquid Fuel



Natural Gas

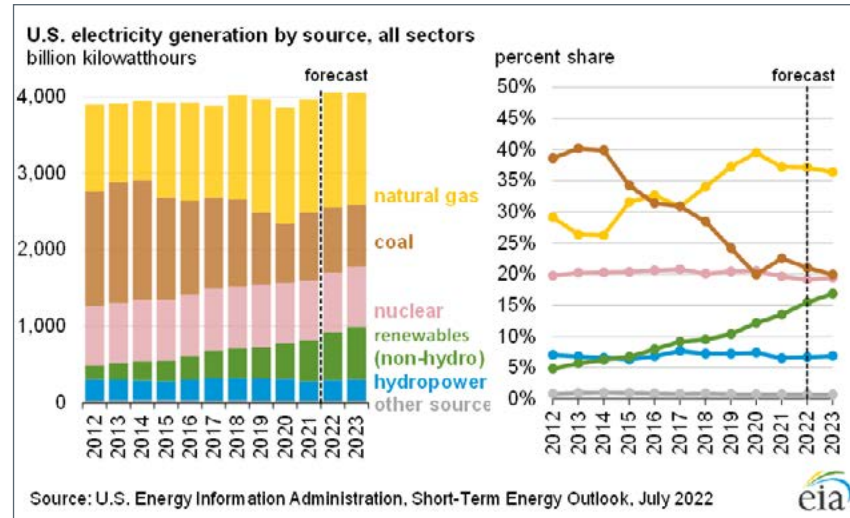
- The spot price of natural gas at Henry Hub averaged \$6.07 per million British thermal units (“MMBtu”) in the first half of 2022 (“1H22”). The average price increased in each month from January through May, when it reached \$8.14/MMBtu before declining to \$7.70/MMBtu in June. EIA expects the Henry Hub spot price will average \$5.97/MMBtu in 2H22 and average \$4.76/MMBtu in 2023.
- EIA estimates that U.S. liquefied natural gas (“LNG”) exports averaged 11.2 billion cubic feet per day (“Bcf/d”) in 1H22, compared with 9.5 Bcf/d in the same period in 2021. EIA expects LNG exports to average 10.9 Bcf/d in 2022 and 12.7 Bcf/d in 2023. EIA reduced their forecast for LNG exports in 2H22 as a result of the outage at the Freeport LNG export facility in Texas. The forecast assumes the facility will return to near full operations in January 2023.
- U.S. dry natural gas production in the forecast averages 96.2 Bcf/d in 2022, up 2.7 Bcf/d (3%) from 2021. EIA forecasts average production will increase to almost 100.0 Bcf/d in 2023.

- The spot price of Brent crude oil averaged \$71 per barrel (“b”) in 2021, and EIA forecasts the Brent price will average \$104/b in 2022 and \$94/b in 2023.
- Global oil inventories in the forecast rise by 0.8 million barrels per day (“b/d”) in 2022 and remain unchanged in 2023. Inventory builds in 2022 reflect rising production of liquid fuels in the United States and OPEC, paired with slowing liquid fuels consumption growth.
- EIA expects global consumption of liquid fuels will grow by 2.2 million b/d in 2022 and by 2.0 million b/d in 2023.
- EIA forecasts that OPEC crude oil production will rise by 2.4 million b/d to average 28.7 million b/d in 2022 and will further increase to 29.3 million b/d in 2023. Crude oil production from OPEC members averaged 26.3 million b/d in 2021.
- U.S. crude oil production in the forecast averages 11.9 million b/d in 2022 and 12.8 million b/d in 2023, which would set a record for most U.S. crude oil production in a year. The current record is 12.3 million b/d, set in 2019.
- U.S. regular gasoline retail prices averaged \$4.11 per gallon (“gal”) in the first half of 2022 (“1H22”), up from \$2.78/gal in 1H21. EAI forecasts gasoline prices will average \$4.05/gal in 2022 and \$3.57/gal in 2023. U.S. diesel prices averaged \$4.91/gal in 1H22, up from \$3.06/gal in 1H21. EIA forecasts diesel prices will average \$4.73/gal in 2022 and \$4.07/gal in 2023.
- U.S. refineries average 94% utilization in the third quarter of 2022 (“3Q22”) in the EIA forecast, as a result of high wholesale product margins. Although EIA expects that refinery utilization will be at or near the highest levels in the past five years, operable U.S. refinery capacity has fallen by about 1 million b/d. As a result, EIA does not expect U.S. refinery output of products to reach its highest level in the past five years.



Electricity, Coal, Renewables, and Emissions

- U.S. consumption of electricity increases in the forecast by 2.3% in 2022, largely because of rising economic activity. Growth in electricity consumption slows to 0.6% in 2023.
- The largest increases in U.S. electricity generation in the forecast comes from renewable energy sources, mostly solar and wind. EIA expects renewable sources will provide 22% of U.S. generation in 2022 and 24% in 2023, up from a share of 20% in 2021.
- EIA forecasts that the cost of natural gas to U.S. power generators will rise from \$4.97/MMBtu in 2021 to \$6.35/MMBtu in 2022. Despite the increase, EIA forecasts the share of natural gas in U.S.



generation will average 37% in 2022, about the same as last year. The similar share of natural gas generation despite higher prices results partly from the forecast that electricity generation from coal will decline from 23% of the total in 2021 to 21% in 2022 and to 20% in 2023, which reflects the continued retirement of coal-fired generating capacity and other coal market constraints.

- EIA forecasts the U.S. residential electricity price will average 14.4 cents per kilowatt-hour in 2022, up 5.3% from 2021. Higher retail electricity prices largely reflect an increase in wholesale power

prices driven by rising natural gas prices. Annual average wholesale prices for 2022 range from an average of \$50 per megawatt-hour (“MWh”) in the Southwest Power Pool market to \$85/MWh in the ISO New England market.

- EIA expects energy-related carbon dioxide (“CO2”) emissions in the United States to increase by 1.5% in 2022 and remain generally unchanged in 2023.

The comprehensive report is available at www.eia.gov/outlooks/steo.

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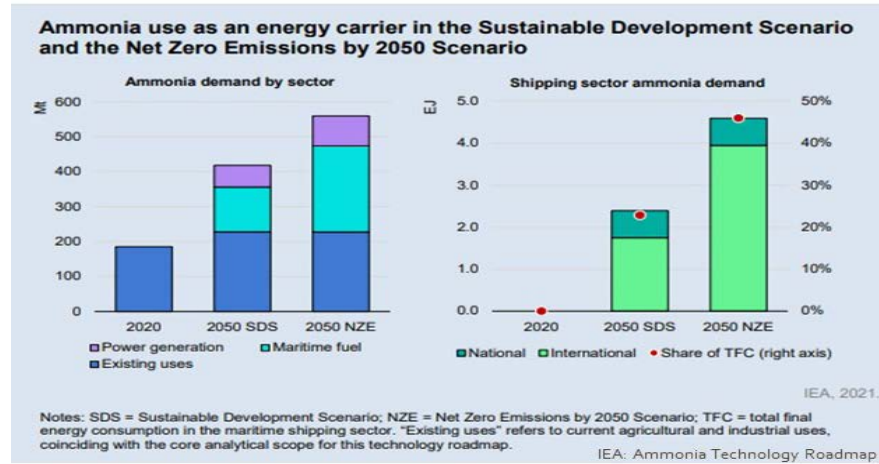
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April 2022 Commerce Club Featuring Nick Karim, General Manager, Vopak Moda Houston Terminal

Ammonia in the Journey to a Net-Zero Future



Nick Karim
General Manager
Vopak / Moda



In the journey to reach net-zero emissions, Nick Karim, general manager of Vopak Moda Houston, is excited about ammonia. Because ammonia has three hydrogen atoms and one nitrogen atom and can flexibly be produced with conventional or renewable resources, Karim has shifted gears in his long career in the oil and gas industry to help develop ammonia's potential for a low-carbon future.

"Ammonia has no carbon in it, and there is no carbon dioxide when you burn it. Combustion-wise, it's not perfect, but there's no carbon there," Karim said as opened his talk at the Port Bureau's April 12 Commerce Club luncheon. "It's intriguing!"

Formed in 2016, Vopak Moda Houston is a joint venture between Royal Vopak and Moda Midstream. Strategically located in Houston's refining and petrochemical corridor and in close proximity to multiple ammonia, hydrogen and nitrogen pipelines, Vopak Moda Houston is the first greenfield terminal development in the port of Houston in more than a decade. It is the only waterborne ammonia terminal in the port of Houston with deepwater capabilities.

Ammonia is a potential hydrogen storage and carrier. Transporting ammonia is much safer when compared to transporting hydrogen by itself.

"My father would say to me 'hydrogen is a very slippery molecule'. It's true. It's very hard to keep hydrogen. We've transported ammonia by ship via VLGCs [Very Large Gas Carriers] for years. They transit the world, and they can arbitrage hydrogen region to region by moving ammonia."

It can be utilized for a wide range of applications, including fuel, working fluid, refrigerant, hydrogen carrier, fertilizer, feedstock, chemical, cleaning agent, and more. Ammonia is a strong candidate for fuel for engines, gas turbines, power generators, and burners – and the modifications needed for such engines are relatively small.

In breaking down the manufacturing cycle utilized in ammonia, Karim explained that it is typically formulated with hydrogen and nitrogen. It can be utilized for renewal energies with a no-carbon footprint, or it can be produced by using methane with a low-carbon footprint. Ammonia is categorized as colors based on which type of manufacturing process is utilized for its production. Of interest for renewables are green ammonia (manufactured via electrolysis) that has no carbon footprint and blue (manufactured via reforming or gasification) that has a low-carbon footprint.

Karim noted that numerous projects that include ammonia as an energy carrier have been announced. Some are under construction, with a final investment decision or feasibility studies completed.

"The port of Houston can be a low carbon fuel supplier to the world," said Karim. "We bring the ammonia in. We can burn it in our power or chemical plants in the region, or we can proffer it to others using ammonia for their hydrogen uses. We could also fuel ships."

In discussing the risks of utilizing ammonia as a fuel, Karim compared the warnings and precautions for ammonia and gasoline. "This is the mountain we'll have to climb for ammonia," explained Karim. "It has all the right combustions, but can we get past the health hazards?"

Karim compared the ideas to what initial discussions for using gasoline might have resembled when gasoline was first suggested for use in automobile engines. "If we can manage the risk of something as explosive as gasoline in everybody's car, can we do the same with ammonia?"

Karim concluded his presentation with a Q&A session. Topics included some of the requirements for transporting ammonia in LPG tanks, the economics of utilizing ammonia for renewables, and research underway for utilizing ammonia as a fuel.



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May 2022 Commerce Club Featuring Jennifer Carpenter, President & CEO, The American Waterways Operators



Jennifer Carpenter
President & CEO
The American Waterways Operators

Jennifer Carpenter, president & CEO of The American Waterways Operators ("AWO"), was the featured speaker at the Port Bureau's May Commerce Club luncheon. Carpenter highlighted the national importance, career appeal, and current challenges to the industry.

Introducing her presentation with a video from AWO to show the large array of vessels and mariners at work in the inland, coastal and harbor areas, Carpenter stressed the tugboat, towboat and barge industry is the largest segment of American maritime, moving nearly 700 million tons of cargo annually, is the greenest mode of freight transportation, and offers family-wage careers young people may pursue right out of high school.

Carpenter also emphasized the importance of Jones Act policies. She described present bi-partisan support for the Jones Act as "rock solid" but reminded attendees that representative positions change regularly. It is important to keep the messaging of how the Jones Act provides American jobs and secures the supply chain within the nation.

Speaking to current and future goals, Carpenter said the Infrastructure Act was "the most important legislature since the New Deal" and would play an important role in meeting the challenges to a carbon neutral reality. A truly optimized domestic maritime industry will reduce carbon emissions, enhance safety in freight movement, and continue to provide good paying jobs for Americans.

She urged prioritizing how to tell our story to diverse groups and not rest on any assumptions that people really know what the maritime industry does.

"I encourage each one of you to think of yourself as an advocate," said Carpenter.

Her presentation was followed by a Q&A session that included the topics of emissions, educating for the sharing of data, and barge/rail intersection.

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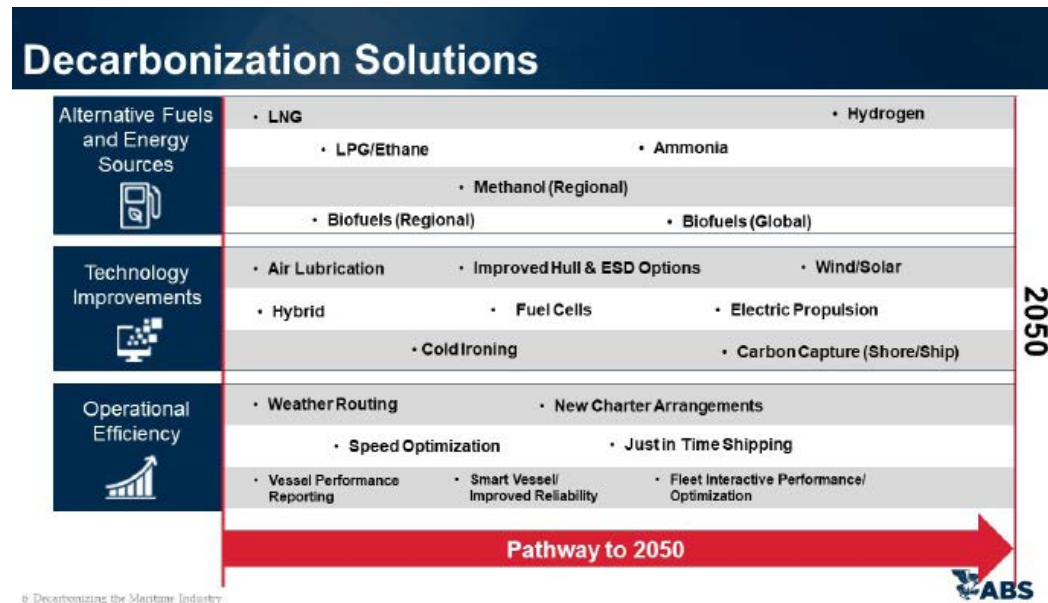
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Decarbonizing the Maritime Industry Requires a Mindset of Continuous Improvement



Peter Fitzpatrick
SVP Global Offshore
ABS



Peter Fitzpatrick, SVP global offshore for ABS, addressed the current drivers in decarbonizing the maritime industry at the Port Bureau's June Commerce Club luncheon. As SVP of global offshore, Fitzpatrick is responsible for identifying market trends as part of leading his business team to meet and exceed client expectations.

"I am sticking to international drivers today for a bigger perspective," said Fitzpatrick as he opened his presentation.

The International Maritime Organization ("IMO") has set targets to reduce carbon intensity by 40% by 2030 and 70% by 2050 and to reduce GHG emissions 50% by 2050. (Emissions reduction target goals are as compared to 2008 levels.) These imperatives have been the driving force in plans to decarbonize the maritime industry internationally. The next regulations targeting vessel efficiency and carbon intensity are set to come into play in January 2023 and will bring more challenges as well as opportunities. In addition, many companies seek to reach a net-zero goal ahead of regulations.

"You need to have a mindset change of continuous improvement," said Fitzpatrick.

He explained that the IMO has agreed on technical and operational measures for individual vessels in an effort to assist the industry in achieving the 2030 and 2050 emissions reduction targets. Short-

term measures include the evaluation and improvement of vessel energy efficiency requirements ("EEDI"), the application of technical efficiency measures for existing ships ("EEXI"), and the introduction and regulation of carbon intensity indicators ("CII") for ships in operation.

"CII is the real driver: how much fuel do I need to transport cargo from A to B, and what's my CO2 footprint? This is where you must have that mindset of continuous improvement," Fitzpatrick said.

To better maximize fuel efficiency, Fitzpatrick emphasized the importance of embracing digital efficiency or "Just in Time" ("JIT") vessel scheduling optimization. JIT depends on tightly coordinating the operations related to a vessel call: the readiness of pilots, berths, and shore side systems. This bigger picture also encompasses analysis from the shipper as to the efficiency of the complete voyage, examining the ports of call that match their efficiency goals. There is a "smarter ships" requirement as well because managing the efficiency timeline needs predictive vessel maintenance.

Fitzpatrick gave a brief overview of fuel options, noting the advantages and disadvantages of existing and future fuel possibilities for reducing carbon – and that some are viewed as more transitional fuels. These included LNG, LPG/ethane, methanol, ammonia, and hydrogen fuels.

In considering fuels, Fitzpatrick explained that the "life cycle" of a fuel should also be considered. This means examining "well-to-tank" and "tank-to-well" emissions efficiency. "Well-to-tank" follows the fuel life in emissions from energy production, transmission, electrolysis and synthesis, storage, transport, and port storage. "Tank-to-wake" considers its final use. He showed examples that looked at LNG, methanol, and ammonia fuel development from a total "well-to-wake" life for their emissions. As a final example, Fitzpatrick detailed the CII of LNG as fuel for a VLCC vessel.

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FUTURE EVENTS

- **July 29:** Port 101 lead by CAPT Bill Diehl on the Houston port region
- **August 20:** 2022 Annual Maritime Dinner honoring Ric Campo, port commission chairman, Port Houston
- **September 8:** Commerce Club Luncheon with guest speaker Alan McKnight, chief investment officer, Regions Wealth Management
- **October 13:** Commerce Club Luncheon with guest speaker Roger Guenther, executive director, Port Houston
- **November 7:** 14th Annual Captain's Cup Golf Tournament at Sugar Creek Country Club.
- **November 10:** Commerce Club Luncheon: TBD

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