Greater Houston Port Bureau

Port Bureau News

June 2021

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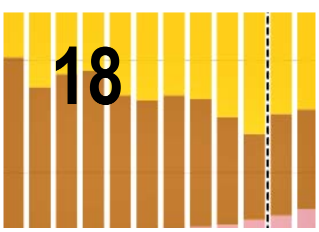
About the Cover

Providing vaccinations against COVID-19 for mariners is an important focus for many around the globe, including the Houston International Seafarers' Center ("HISC"). In the port of Houston, these vaccinations are provided by a vaccination team of nine people, including one chaplain and HISC driver who have administered over 4,000 shots.
Photo courtesy of Houston International Seafarers' Center

NOAA and the Bureau of Economic Analysis (BEA) described businesses dependent on the nation's oceans, coasts and Great Lakes between the years 2014 and 2019. Marine-related gross domestic product grew 4.2% from 2018 to 2019, faster than the 2.2% growth of the total U.S. gross domestic product as measured in inflation-adjusted dollars. Businesses included in the report also generated a total of $665.7 billion in sales and supported 2.4 million jobs in 2019. Read more on page 10.



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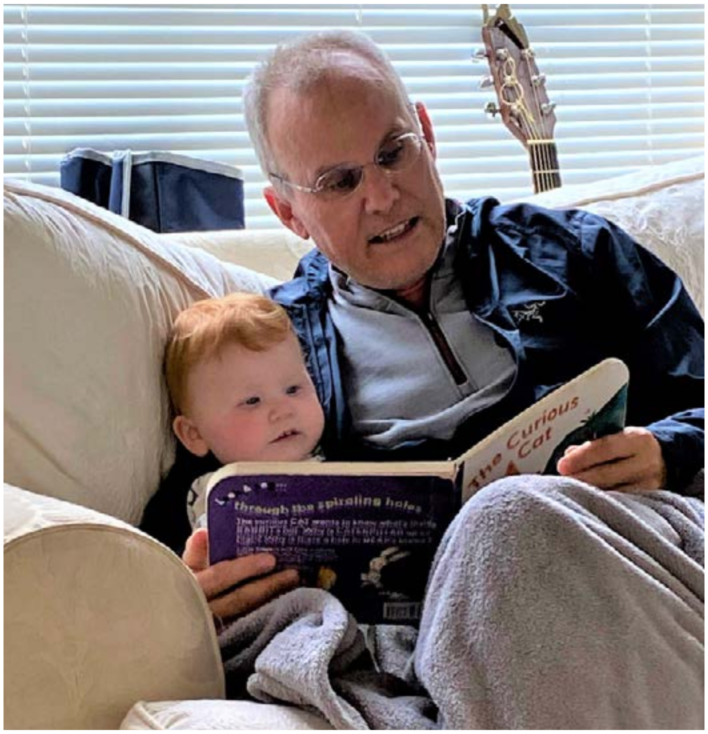
Captain’s Corner

The Curious Cat

Recently I had the pleasure of reading “The Curious Cat” to our one-year-old granddaughter, Avery. We followed the cat in his exploration of holes that bears, caterpillars, and assorted other creatures make in nature. With colorful illustrations, just a few words per page, and holes punched through the pages for little fingers to explore, it was a perfect book for bonding with little Miss Avery.



On our umpteenth time through the holes, she became interested in trying to eat some of the critters in the book, but the drool-proof book proved sturdy. I used the time to bridge the narrative to engineering and how we make holes through Galveston Bay for us to do business domestically and globally. My daughter and wife rolled their eyes.

On the plane ride back to Houston, I started thinking about how to better explain why digging holes through the bay is so important to all of us. Infrastructure is the hot topic of the day – and rightly so. Without the roads, bridges, rail, pipelines, ports, and waterways, the nation would come to a standstill. We have repeatedly seen what happens when even a small part of our infrastructure is impeded by an incident or obstacle.

Our challenge is in how maritime values are frequently overlooked by the public and their elected officials who do not truly realize just how much commerce depends on marine operations – and its underlying infrastructure. Although our local congressional representatives understand this, those outside of the port region do not. The Port Bureau Advocacy Committee is working to change this, which is why several committee members reached out and recently briefed Congressman Colin Allred from Dallas and Congressman Sam Graves from Missouri on why the Houston Ship Channel is so important to the nation.

Investing in infrastructure makes sense – and nowhere can it be more significant than our own waterway. Its infrastructure determines if we are ready to accommodate increasing vessel sizes, build resilience to weather impacts, implement greater optimization measures, meet increased security challenges, and improve the environmental sustainability of marine operations.

Expanding the Ship Channel is costly, but the value we bring to the region as well as the nation should always be considered when balancing the books. Our port currently generates $802 billion annually in economic activity in the country and supports 3.2 million U.S. jobs. It’s been said many times, but it bears repeating. The Houston Ship Channel, serving nearly 200 private/public terminals, is an essential economic engine.

Ship channel infrastructures are investments the nation struggles to make — it is like having to dig out a hole under your house to shore up the foundation. It’s expensive, and there isn’t much gratification to it because you can’t see it or show it off. Even the cat is probably not that curious about it. But if you don’t do foundation work when it’s needed, your house eventually becomes worthless. Leaving a hole in port infrastructure investment will cause the economic value of the visibly useful bridges, roads, and rails to crumble.

We need Congress to see this. We must promote the significance of the waterway every chance we get. Keeping the debate informed will help determine whether the size and allocation of the infrastructure budget the port region receives is in proportion to our value. Achieving our goals relies not only on the support of industry and government, but also on the public. We need to cultivate a collective long-term vision for the sustainable future of the port region.

Let’s take a tip from the curious cat by getting out, asking questions, and furthering explorations to implement solid infrastructure financing to yield big benefits for all.

Bill

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

Port Watch

The Merry Month of May

Thomas Dekker's Elizabethan poem, written as the 16th century came ended, comes to mind as the month of May casts off the doldrums of April in the maritime trade arena.

O the month of May, the merry month of May,
So frolic, so gay, and so green, so green, so green!

Perhaps it wasn't the merriest of months, but a 6% climb was yet another indication that normalcy was drawing nearer.

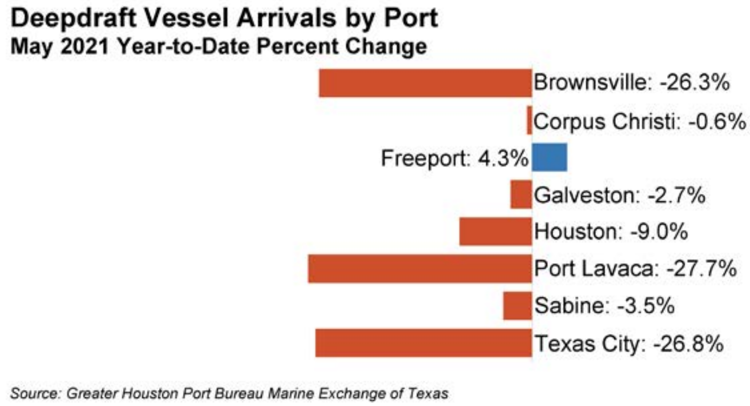
This was most evident closer to shore as inland tow movements logged their 4th consecutive rise and bested the previous high set in January. While the tow count into and through the Houston Ship Channel continues to remain 13% below last year's figures, the most recent 4% monthly uptick signals that brownwater commerce is stirring from its slumber. Undoubtedly, there are certain sectors that are outperforming others but, as commodities continue to rise, the movement of goods shall follow.

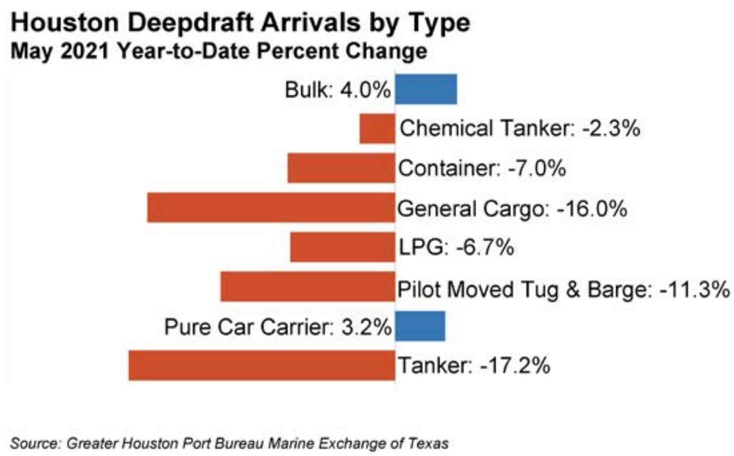
The same ship channel that handled nearly 11,000 inland tows in May also welcomed over 10% more deepdrafts when compared to April. Yet, it continues to lag 2020's year-to-date arrival numbers by 9%. That aside, there were a few additional high notes in May. Tankers posted a near 17% monthly increase with its highest count for the year. A bullish barrel is stirring things up for this category. Nonetheless, it still needs to make up for much lost ground given that it is over 17% behind last year's count. General cargo posted its 3rd consecutive high count following its 4th monthly gain in a row. Yet, despite the most recent 18% jump, it remains 16% off of the prior year. That said, the fact that oil and general cargo are syncing up raises hope that projects in the fracking fields are poised to wax.

Bulkers and car carriers are the only two vessel categories calling upon the port of Houston that remain in the black for the year – 4% and 3.2% respectively. The bulk trade experienced a 5.3% bump over the last month; reflecting a solid demand for the export of bulk commodities. Cheap dollars and pent up demand for vehicles contributed to the arrival of 3 more car carriers. Unfortunately, some of that demand will remain frustrated due to a shortage of computer chips. Of course, one cannot produce much without the bounty of chemicals that are extracted from a barrel of oil. Chemical tankers may have posted a 28% wane for the month, but the arrival count continues to outpace 2020's by just shy 13% - another indication that international production is on the rise. LPG arrivals hiked up 2.5% but remain off almost 7% for the year signaling continued weakness in overseas economic activity in the European markets.

The ubiquitous steel boxes that revolutionized maritime trade several decades ago appear to be telegraphing that the consumers' appetite for goods remains healthy. May was more or less mirthful with a 4% climb in the overall TEU count. The most dramatic changes in the movement of containers are the empty export statistics. In the last month alone, there was a 25% jump in the movement of empty export containers and - while full import TEU numbers are up 26% year-to-date - empty exports are nearly 200% higher than last year's tallies. Could it be not enough containers are on hand overseas to meet the nation's demand for imported goods?

Beyond Houston's skyline, most Texas ports had a sanguine view of May. Texas City was the beneficiary with an uptick in the export of chemicals which contributed to an impressive





32% monthly rebound. Unfortunately, it still trails last year's soft year by 27%. Galveston, a port particularly hard hit in 2020 by the idling of cruise ships and plunge in demand for offshore oil, eked out a 2% gain; however, with the return of cruise ships to the Island of Galveston, it should not be difficult for the port to erase its current 3% year-to-date deficit over the next several months.

On the Rio Grande, the Port of Brownsville is struggling to regain the momentum it experienced last year. April was 20% more merry than May and, thus far, 2020 is 26% of this year. To the northeast, Corpus Christi is a mere 5 vessels (i.e., 0.6%) behind 2020's year-to-date count after chalking up a 2.4% monthly wane (i.e., 5 fewer vessels). In other words, 2020 and 2021 are neck-and-neck. On the opposite end of the coast, Sabine is benefiting from a burgeoning demand of LPG and chemicals which currently stand 61% and 13% ahead of last year's pace respectively. Mind you, May was anything but merry as chemical tanker arrivals plummeted by 28%. Overall, this border port is down by 3.5% for the month and the year.

So, shall we save the merriest of the ports for last? Another triple-digit performance has added to Freeport's maritime trade bounty. The very merry month of May welcomed 9.5% more deepdraft arrivals and remains over 4% ahead of last year's record vessel count. As 100+ arrival months are added to the year-to-date numbers, one may be tempted to rename the port "Gleeport". Indeed, things are "so green, so green, so green" in this queen of a port.

Derrick's merriment over the verdant scenes of May was most certainly not tied to the ebb and flow of marine commerce into Texas. His catchy poem was but a small part in his play entitled, "The Shoemaker's Holiday" – what the inhabitants of Henry VI's England would consider a 'City Comedy.' It was a tale of economic mobility, social boundaries, and the vicissitudes of capitalism in a bustling urban setting. In short, a trade well-made could bring an entrepreneur much coin or an ill-timed bargain could sink the fortunes of the wealthiest of souls. Ultimately, the green of May was always a sign of hope for a better tomorrow. Hence, the trade gains of late Spring shall yield a bountiful Fall or at least one that promises to eclipse last year's malaise.

O the month of May, the merry month of May,

So frolic, so gay, and so green, so green, so green!

And then did I unto my true love say:

"Sweet Peg, thou shalt be my summer's queen!"

Tom Marian
Buffalo Marine Service
buffalomarine.com

The 92nd Annual Port Bureau

MARITIME DINNER

HONORING THE
2021 MARITIME LEADER OF THE YEAR

JIM TEAGUE

CO-CEO, ENTERPRISE PRODUCTS

The Greater Houston Port Bureau named A. J. "Jim" Teague the 2021 Maritime Leader of the Year, recognizing his outspoken advocacy and financial investment to improve the Houston Ship Channel, and for rallying industry to work together to achieve that goal.

Reserve your table

(713) 678-4300
dinner-info@txgulf.org

Event Information

Date: Saturday, August 21, 2021
Time: 5:30 p.m.
Location: Bayou City Event Center
Houston, Texas
Dress: Black-Tie Optional

About the Annual Maritime Dinner

The Annual Maritime Dinner is one of the largest maritime formal business events in the U.S. with over 750 attendees, bringing together maritime, transportation, and industry professionals and their guests to recognize the Maritime Leader of the Year.

Attendees are treated to an elegant night filled with complimentary perks, including free valet or self-parking, open bar during the cocktail reception, professional photography, and wine service during the gourmet dinner. The cocktail reception features a silent auction.

The Greater Houston Port Bureau is a 501(c)6 non-profit trade association. Dinner proceeds benefit in part the Port Bureau's regional maritime advocacy efforts.

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The 92nd Annual Port Bureau MARITIME DINNER

Sponsorship Form

92ND Annual Port Bureau Maritime Dinner
Honoring Jim Teague, Enterprise Products
August 21, 2021, in Houston, Texas

Deadline: July 31, 2021

e: dinner-info@txgulf.org
p: (713) 678-4300
txgulf.org/annual-dinner

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☐ Donate item (describe in next section)

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☐ Credit Card (please circle one: Master Card / Visa / Discover / American Express)

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Silent Auction Item Description & Restrictions:____

____

Contributor's Signature: ____Date: ______________

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The 92nd Annual Port Bureau

MARITIME DINNER

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As of June 17, 2021

The 92nd Annual Port Bureau MARITIME DINNER

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Photo Booth

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Valet

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Bar

ENERGY TRANSFER

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Floral

EXCARGO

FIFTH THIRD BANK

Houston Mooring Co., Inc.

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Royston Razor

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Houston Pilots

Pappa's Crawfish Hole — Suck Heads Eat Tails

Platinum

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Mutiny Wine Room
Schröder Marine Services, Inc.

Silver

7 Acre Wood
Little Beakers

Lost Oak Winery
Panera Bread

Suderman & Young Towing Co.
William Chris Vineyard

Bronze

New Orleans Riverboat Cruises
Niko Niko's Greek & American Cafe

As of June 17, 2021

Marine Economy in 2019 Outpaced US Economy Overall

American 'blue economy' accounted for nearly $397 billion

America's marine economy contributed about $397 billion to the nation's gross domestic product in 2019 and grew faster than the nation's economy as a whole, according to the most current results of the first official Marine Economy Satellite Account released in June by two Department of Commerce agencies.

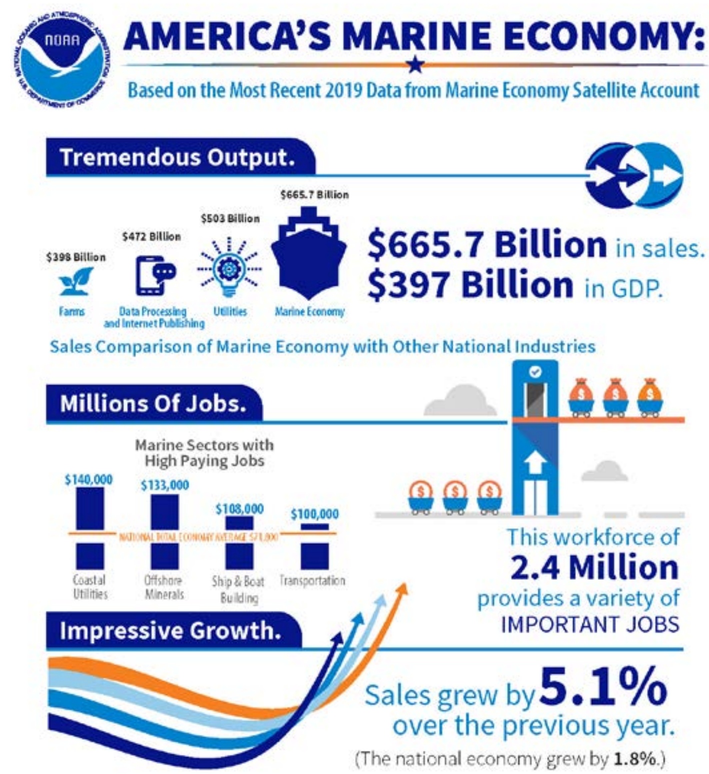
"America's strong marine economy is absolutely vital for building back better," said Secretary of Commerce Gina M. Raimondo. "President Biden sees the immense value and potential of strengthening America's blue economy, and this administration will continue to take actions to combat the climate crisis, conserve our oceans, and protect our coastal communities."

"These statistics show how powerful America's blue economy is as a driver of jobs, innovation and economic growth," said Ben Friedman, acting NOAA administrator. "This information will assist our nation's economic recovery by helping policymakers, industry advocates, and organizations track and accelerate investments in target markets."

For these statistics, experts from NOAA and the Bureau of Economic Analysis (BEA) described 10 sectors representing businesses dependent on the nation's oceans, coasts and Great Lakes between the years 2014 and 2019. Marine-related gross domestic product grew 4.2% from 2018 to 2019, faster than the 2.2% growth of the total U.S. gross domestic product as measured in inflation-adjusted dollars. Businesses included in the report also generated a total of $665.7 billion in sales and supported 2.4 million jobs in 2019.

The 10 sectors ranked by their sales are:

- Tourism and recreation, including recreational fishing ($235 billion)
- National defense and public administration ($180 billion)
- Offshore minerals ($93 billion)
- Transportation and warehousing ($64 billion)
- Commercial Ship and boat building ($31 billion)
- Living resources, including commercial fishing and aquaculture ($27 billion)
- Utilities ($12 billion)
- Research and education ($10.4 billion)
- Construction ($7.0 billion)
- Professional and technical services ($6.3 billion)



"These statistics are further proof that our waters are vital for America's economy," said Nicole LeBoeuf, acting director of NOAA's National Ocean Service. "It is nearly impossible to go a single day without eating, wearing, or using items that come from or through our ports and coastal communities."

Last year, NOAA and BEA released the Ocean Economy Prototype statistics which covered 2014-2018 and were the most comprehensive measurement of the marine economy at the time. This year's statistics offer improved national estimates for ocean, coastal, and Great Lakes-related economic activity by major sector, accounting for inflation. The data, report and other materials are available at Marine Economy | US Bureau of Economic Analysis (BEA) and on NOAA's Digital Coast website.

Port Bureau Updates

ABS Consulting Launches Cybersecurity Offering to Combat Increasing Global Attacks on Operational Technology Networks

ABSG Consulting Inc. (ABS Consulting), a global operational risk management company, launched an integrated new cybersecurity service designed to help organizations monitor, manage and reduce the growing threat of Operational Technology (OT) cyber attacks.

"The digital front line is expanding to the OT environment, impacting today's industrial systems and equipment critical to high performing operations, business reputation and safety," said Ian Bramson, Global Head of Cybersecurity from ABS Consulting. "This is a new area with low maturity and high risk. As digitalization expands so do the risks of a system breach or cyber attack."

The solution is designed to deliver effective support to a wide range of industry sectors, including power plants, wind farms, oil rigs, platforms to ships, pipelines and industrial manufacturing. The new Cybersecurity Managed Services developed by ABS Consulting helps companies reduce cybersecurity risks across multiple facilities and assets by 24/7 monitoring of critical infrastructure and OT networks for cyber threats.

The service offering improves awareness and supports decision making for industrial control systems and networks by delivering insights across a company's digital ecosystem using OT domain expertise, and IT/OT integration included in a single user platform, which proactively monitors and manages a range of key issues:

- Enables cybersecurity risk capabilities to identify systems, assets and data – capabilities that, when disrupted, pose risks to people, operations and the environment.
- Implements risk control processes and measures to assist with contingency planning and continuity of operations.
- Detects a cyber event at any time. Technology that never sleeps.
- Provides cybersecurity resilience to programs, operations and services critical to business success and performance.
- Supports the fast restoration of an organization's systems for safe operations in line with a company's disaster recovery plans.

"Services are tailored to a customer's operation, and our cutting-edge technologies and a state-of-the-art Industrial Security Operations Center (ISOC) allows us to identify and mitigate attacks in real-time," said Dennis Hackney, ABS Consulting's Director of Cybersecurity Product Development. "We can tell you where there's a threat and where the bad guys are breaching your systems, and even how fast they are penetrating the gaps in a system. We can tell you what changes they are making and provide immediate remedy to the threats."

Dow to Build MDI Distillation and Prepolymers Facility in Freeport, Texas

Capacity to support and advance downstream systems growth in construction, consumer, and industrial systems markets; Dow to exit and shut down its polyurethane assets at La Porte, Texas, operations

Dow announced plans to build an integrated MDI distillation and prepolymers facility at its world-scale manufacturing site in Freeport, Texas. This investment supports increasing demand for downstream polyurethane systems products and advances Dow's leading positions in attractive applications in construction, consumer, and industrial markets that are growing above GDP.

The new Freeport MDI facility will replace Dow's current North America capacity in La Porte, Texas, and will also be capable of supplying an additional 30 percent of product to Dow's customers. In coordination with the start-up of the new MDI facility, expected in 2023, Dow will shut down its polyurethane assets at the La Porte site.

"This MDI investment optimizes our existing asset infrastructure and enhances our global polyurethanes leadership position, further enabling us to support downstream systems customers' growth," said Jane Palmieri, president of Dow's Industrial Intermediates & Infrastructure operating segment. "The back integration at the Freeport site creates a cost competitive supply of key upstream polyurethane raw materials, ensures a reliable supply position to support our growth in downstream high-value polyurethane markets and delivers a more sustainable production process."

The new facility in Freeport will reduce Dow's carbon footprint and water usage by:

- eliminating the need for the generation of thermal power by utilizing existing thermal energy from the Freeport site,
- reducing water intake and wastewater discharge (through production efficiencies), and
- eliminating the need for transport of raw materials.

Dow's extensive Polyurethane Systems franchise upgrades key polyurethane components in order to produce rigid, semi-rigid and flexible foams, and coatings, adhesives, sealants, elastomers and composites for applications that range from industrial and infrastructure solutions, to consumer comfort solutions in flooring, furniture, bedding and footwear, to automotive solutions for vehicle interior, and energy-efficient insulation materials.

Magellan and Enterprise Team Up With Intercontinental Exchange for New Houston Crude Oil Futures Contract

Magellan Midstream Partners, L.P., Enterprise Products Partners L.P. and Intercontinental Exchange, Inc., announced the establishment of a new futures contract for the physical delivery of crude oil in the Houston area. The Midland WTI American Gulf Coast contract (ICE: HOU) is being launched in response to market interest for a Houston-based index with greater scale, flow assurance and price transparency. It will utilize the capabilities and global reach of ICE's industry-recognized, state-of-the-art trading platform and is due to be launched by ICE by early 2022, subject to regulatory approval.

The quality specifications of the new futures contract will be consistent with a West Texas Intermediate ("WTI") crude oil originating from the Permian Basin with common delivery options at either the Magellan East Houston ("MEH") terminal or the Enterprise Crude Houston ("ECHO") terminal. In support of this new futures contract, Magellan and Enterprise anticipate discontinuing their existing provisions for delivery services under the current futures contracts deliverable at each terminal once the new contract receives regulatory approval and is finalized.

"Magellan is pleased to join forces with Enterprise and ICE to offer this leading-edge joint futures contract," said Aaron Milford, Magellan's chief operating officer. "The new contract improves the transparency, flexibility and marketability of Midland WTI crude oil for Gulf Coast and export customers while maintaining industry-recognized quality and consistency."

Harold Hamm, Chairman of the Board of Continental Resources and Founding Member of the American Gulf Coast Select Best Practices Task Force Association said, "On April 20th last year, when the Cushing, Oklahoma WTI contract traded down to negative $38 it was a wake-up call to the oil industry that the storage constraints and landlocked location of the Cushing contract could no longer be ignored. I started the American Gulf Coast Select Best Practices Task Force to develop specifications for a new U.S. light sweet crude oil price benchmark in the American Gulf Coast, and to advocate for its implementation and adoption as the main pricing point for the U.S. oil markets. We think a futures contract in the most interconnected market center in the country, with a widely accepted quality spec, which settles with guaranteed delivery of crude oil is an important new alternative for the industry. The task force has worked tirelessly to create a marker with transparency and liquidity that is waterborne for this modern era. The Midland WTI American Gulf Coast futures contract established by the alliance between ICE, Magellan and Enterprise is a huge step forward for the industry and goes a long way to accomplishing the mission on which the task force has been working."

A.J. "Jim" Teague, co-chief executive officer of Enterprise's general partner, and Michael Mears, Magellan's chief executive officer, said, "We are grateful for Harold's continued leadership on behalf of the industry and being a champion of this very important step for the industry."

Jeff Barbuto, global head of oil markets at ICE stated, "Combining efforts with Magellan and Enterprise to establish a benchmark for pricing Midland quality WTI on the Gulf Coast allows ICE to offer the industry a futures contract with over 4 million barrels per day of supply capacity from Midland into Houston, access to both domestic and foreign demand, and nearly 60 million barrels of storage capacity in the Magellan and Enterprise systems. Traded on the same global platform as ICE Brent, Murban and Platts Dubai Crude Oil futures contracts, the new Midland WTI American Gulf Coast contract can also offer significant capital efficiencies to the industry and provide industry-leading quality that buyers have grown accustomed to in the Houston market."

Shell Launches Its First European EV Mobility Hub in Paris

Aimed at the rapidly growing segment of car sharing, ride hailing and last mile delivery companies, Shell's business-to-business (B2B) mobility hubs will provide drivers with dedicated electric vehicle charging services in the center of the city and beyond.

The first hub, consisting of eight rapid chargers, is now open in central Paris, at Paris City Hall car park. It marks the introduction of Shell's retail business in Paris – and the launch of Shell Recharge in France. The second hub, near Charles de Gaulle Airport, will be operational by the end of 2021.This pilot will also serve as a blueprint for Shell's future installation activities.

David Bunch, SVP for Europe & South Africa, Shell Mobility said "Opening our first electric mobility hub in Paris is another important milestone in our journey to operating half a million electric charging points by 2025. Supporting the transition to electric mobility will play a big role in tackling climate change and we want to play our part by electrifying fleets and helping countries and cities, like Paris, deliver on their own low carbon commitments."

Shell has set out its strategy to accelerate its transformation into a provider of net-zero emissions energy products and services, powered by growth in its customer-facing businesses. More information can be found on shell.com:[Becoming carbon-neutral by 2050].

GICA Names Coast Guard Veteran as New President

The Gulf Intracoastal Canal Association (GICA) has announced Paul Dittman of New Orleans-based Turn Services will take over as president from Jim Stark at the group's annual seminar in August.

Dittman, currently vice president of compliance, security and safety at Turn Services, has an extensive U.S. Coast Guard background. GICA cited his service in the 8th District in a variety of staff and command positions, working closely with the inland towing industry in St. Louis, New Orleans, Baton Rouge and Port Arthur, Texas. His areas of expertise include waterways management, marine inspections, casualty and personal action investigations, pollution response and port security.

"We are thrilled to announce the selection of Paul Dittman as our prospective president," said Mary McCarthy, chairwoman of GICA's board of directors. "Paul has worked closely with GICA for many years. His experience in the Coast Guard and towboat industry has prepared him very well for leading our association. Simply put, he knows our issues and membership."

Dittman is a graduate of Massachusetts Maritime Academy, where he earned a bachelor of science degree in marine transportation management and an unlimited tonnage third mate's license. He also holds a master of arts degree in national security strategy from the U.S. Naval War College.

July 2021 Hybrid Commerce Club

Join us for a Commerce Club July 8, 2021, 11:00 AM

The July Commerce Club will feature Alan Robb, President of the South Atlantic and Gulf Coast District - ILA, as the guest speaker.

Join professionals from maritime, transportation, and energy companies as well as other organizations in the port region. For details and to register, go to txgulf.gulf/events.

Thank You to Our Sponsors

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Maritime Intern Kaitlin Hall Steps into First Post-Graduate Role

Recent Texas A&M University at Galveston (TAMUG) graduate, Kaitlin Hall, moved into a position with TranSystems Corp. as a business development coordinator in June. Working from the company's Berkeley, Calif., location, Hall will help write proposals, conduct market research, and make contacts with potential and current clients on the West Coast.

Hall graduated TAMUG with a BBA in Maritime Studies and participated in three internships during her time as student. She served in a rotating internship at the Canaveral Port Authority in Florida, as an accounting intern at Galveston Wharves, and as a vessel superintendent intern at Federal Marine Terminals, Inc., in Florida.

The Port Bureau highlighted Hall's internship participation in the July 2020 *Port Bureau News* as a part of a look at the importance of introducing young students to maritime career opportunities. Hall became interested in the maritime sector during a visit to TAMUG that included a meeting with the university's career service coordinator, Jeff English. As a student, Hall's initial interest developed into an enthusiastic industry passion during her internship with the Canaveral Port Authority.

As she pursues her new opportunity with TranSystems, Hall is excited about learning more as she grows in her career. "I am trying to expand my knowledge and understanding of the intermodal aspects of transportation engineering through learning about the various market and service sectors that drive TranSystems' business."

Headquartered in Kansas City, Missouri, TranSystems provides engineering, architecture, planning and construction solutions to the transportation marketplace.

Seafarers' Center Launches Vaccination Initiative for Vessel Crews in Port of Houston

Photo courtesy of Houston International Seafarers' Center

Providing vaccinations against COVID-19 for mariners has become an important focus for many seafarers' centers around the country, including the Houston International Seafarers' Center ("HISC"). Providing these vaccinations in the port of Houston became a reality in May, when a vaccination team of nine people, including one chaplain and HISC driver, vaccinated any willing seafarer onboard three vessels. To date, 4,000 mariners have been vacinated by HISC.

HISC was inundated with phone calls, text messages, and emails regarding the possibility of vaccinations. "I can honestly say this has been by far one of the most rewarding projects I have ever participated in," said HISC's Executive Directory Dana Blume in an email blast to HISC supporters. "The seafarers have been overwhelmingly appreciative of this opportunity and have thanked the nurses for 'saving our lives'. We have succeeded in elevating the importance of the seafarers' role in our industry, economy, and everyday lives."

Set-up, paperwork, and the observation period made each vessel visit approximately two hours. Four vessel visits are planned for Wednesday and more visits will be scheduled as long the Department of Homeland Security ("DHSH") can continue working with the team.

This program with the DSHS is a "proof of concept" project for HISC and DSHS to share with the Houston Health Department and Harris County, so those agencies can assist in developing a long-term program with more teams and more vaccines. An important goal for HISC and their partners in the vaccination endeavor was to demonstrate their ability to perform the duties, having willing participants from vessel crews, and successfully communicate the results to local agencies.

The vaccination outreach by HISC came just as the International Maritime Organization's Secretary-General Kitack Lim called on all IMO Member States to support a "fair global distribution of COVID-19 vaccines, beyond fulfilling their national needs", to ensure seafarers can access vaccines.

For more information or to lend support for the project, contact Dana Blume at dana@houisc.org or (713) 672-0511.

Port Commision Elects New Officers for Freeport.

During the June 10 port commission meeting in Freeport, TX, the commissioners unanimously elected John Hoss as chairman of the port commission. Rudy Santos will serve as the port commission vice chairman. The other officers are as follows: Dan Croft, Port commission secretary; Rob Giesecke, port commission assistant secretary; Shane Pirtle, port commissioner; and Ravi Singhania, port commissioner.

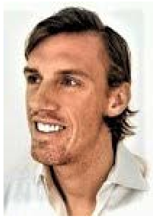
John Hoss has served on the port commission since 2011 and most recently held the position of assistant secretary. Hoss is a Freeport native and second-generation marine business owner, serving as a principle in Freeport Launch, LP since 1997.

"I am excited to have the opportunity to lead the port commission during this time of growth and momentum on the Freeport Harbor Channel deepening and partial widening project," Chairman John Hoss said. "It is through collaboration with my fellow commissioners, Port staff, our Navigation District community, and industry partners that Port Freeport will continue to support economic growth and job creation for Brazoria County and the surrounding region."

Photo: Ravi Singhania, commissioner; Rob Giesecke, assistant secretary; John Hoss, chairman; Rudy Santos, vice chairman; Dan Croft, secretary; Shane Pirtle, commissioner. Photo courtesy of Port Freeport.

Port Freeport is a leading port in the export of crude oil and natural gas liquids and ranked 6th in chemicals, 15th in foreign waterborne tonnage, and 26th in containers. A 2019 Economic Impact Study by Texas A&M Transportation Institute revealed that, nationally, the Freeport Harbor Channel generates 279,780 jobs and has a total economic output of $149 billion. Port Freeport serves Atlantic Container Lines, AMPORTS, BASF, Chiquita Fresh N.A., CEMEX, CMA CGM, Dole Fresh Fruit, The Dow Chemical Company, Enterprise Products, Exxon Mobil, Freeport LNG, Glovis, Grimaldi Lines, Hoegh Autoliners, Kirby Marine, Liberty Global Logistics, Mammoet, MEGlobal, Phillips 66, Riviana Foods, Inc., Sallaum Lines, Tenaris, U.S Department of Energy, Wallenius Wilhelmsen, and Vulcan Materials Company.

Bertling Logistics Names New Business Development Director



Bertling Logistics, a logistics company specializing in the safe, effective and timely delivery of specialist cargo to challenging or remote locations, has announced the appointment of Rasmus Frandsen as director of business development at their Houston office.

Frandsen brings extensive chartering and project experience to his new role at Bertling. He joined the company from Intermarine, where he served in several positions during his tenure. Frandsen also worked abroad in Malaysia for two years before relocating to Houston in 2016 as chartering manager.

"In his new role at Bertling Logistics, Rasmus will boost our commercial activities in North America," said Steve Walter, general manager of Bertling in Houston. "He has a well-established network in the country and knows the who-is-who in our target industries. We are convinced that Rasmus will contribute plenty of new attempts on how to open up and explore new business opportunities for us in North America and beyond."

In business in Houston since 1995, Bertling Logistics focuses on project logistics and trucking solutions for its local and global clients in the EPC, mining/construction, oil & gas and power sectors.

San Jacinto College Named a Top 5 Community College in the Nation

The Aspen Institute has named San Jacinto College as a Finalist with Distinction for the 2021 Aspen Prize for Community College Excellence, the nation's signature recognition of high achievement and performance among community colleges.

"All of us on the Board of Trustees are so proud of everyone at San Jacinto College," said Marie Flickinger, chair of the San Jacinto College Board of Trustees. "We want to commend everyone for the work they do to ensure that students complete what they start. This is an exciting day for the College and the entire San Jacinto College community."

Awarded every two years since 2011, the Aspen Prize recognizes institutions that achieve strong student outcomes across four key areas: teaching and learning, degree completion and successful transfer to four-year institutions, success in the workforce, and equitable outcomes for diverse student groups.

"This Aspen Prize honor goes to the people of San Jacinto College," said San Jacinto College Chancellor Dr. Brenda Hellyer. "Everyone at the College – from our Board of Trustees, administration, and faculty, to our staff, students and community partners – work hard in and out of the classroom every single day in support of our College mission. To be named a top 5 community college in the nation is truly a recognition of their hard work."

Texas A&M Maritime Academy NSMV Named for the State

Photo courtesy of Texas A&M Maritime Academy

The U.S. Maritime Administration (MARAD) has notified the Texas A&M Maritime Academy on the Galveston Campus of Texas A&M University that the National Security Multi-Mission Vessel (NSMV) expected to arrive on campus in 2025 will be named the *Lone Star State*.

The ship is the fourth in a new class of vessels, currently under construction at Philly Shipyard, that are specifically designed to support both maritime training needs and disaster response capabilities.

The NSMV series replaces the aging fleet of training ships currently in use by the six state maritime academies in the United States. The vessels are equipped with numerous training spaces that can support up to 600 cadets at sea and also include critical disaster response capabilities in the Gulf of Mexico.

"The Galveston Campus is fulfilling critical components of Texas A&M University's sea-grant mission and is perfectly positioned both strategically and geographically to provide the instruction and training necessary for the state to foster growth of the blue economy in the Gulf Coast region," said Dr. John L. Junkins, interim president of Texas A&M University in College Station.

Congress approved $325 million in funding to construct the NSMV in December 2020. The 524-foot ship represents a significant investment by the federal government in supporting the future of the maritime industry and future merchant mariners in Texas. The NSMVs are designated as State-class vessels and each are named for the state in which a state maritime academy operates.

"The naming of the NSMV reinforces Texas' strong commitment to the U.S. Merchant Marine and maritime industry and we are proud to be able to represent that commitment with the aptly named Lone Star State," said Col. Michael E. Fossum, superintendent of the Texas A&M Maritime Academy and chief operating officer of the Galveston Campus.

Each year over 300 Texas A&M Maritime Academy cadets live, work, learn and train alongside one another during a two-month summer sea term that provides hands-on at-sea training and instruction. Cadets currently train aboard Massachusetts State Maritime Academy's training ship, *Kennedy*, through a ship-sharing agreement with MARAD established in 2018. The *Kennedy* is expected to transfer to the Texas A&M Maritime Academy in 2023 to serve in place of the *Lone Star State* until its arrival in 2025.

Rice University President David Leebron announced he will leave his position at the end of the next academic year after nearly two decades at the helm of one of the nation's premier institutions of higher learning. Leebron will remain at the university through the 2021-2022 academic year. His departure from the presidency will become effective on June 30, 2022.

Under Leebron's leadership, Rice's student body has become much larger. The student population has grown about 55% from 4,855 when he arrived in 2004 to about 7,500 in fall 2020, and by 2025 it's expected to reach 9,000, an increase of about 85%. As the student body has expanded, it's also become more diverse. Between 2004 and 2020, the number of domestic undergraduate students from underrepresented minority groups grew by almost 75%.

As Rice's reputation has grown around the globe, its enrollment has also become much more international, with about a quarter of all students coming from outside the U.S. Meanwhile, the number of students applying for admission has almost quadrupled from 8,100 in 2004 to almost 30,000 in 2021.

During Leebron's tenure, the university has also launched many new institutes and research centers. Among them are the recently announced Welch Institute for Advanced Materials; Rice 360 Institute for Global Health; the Doerr Institute for New Leaders; the Kinder Institute for Urban Research; the Chao Center for Asian Studies; the Center for African and African American Studies; the Boniuk Institute for the Study and Advancement of Religious Tolerance; the Program in Jewish Studies; the Center for the Study of Women, Gender and Sexuality; the Houston Education Research Consortium; OpenStax; the Liu Idea Lab for Innovation and Entrepreneurship; the Baker Institute Center for the United States and Mexico, and many more.

A Philadelphia native, Leebron is a graduate of Harvard College and Harvard Law School, where he was elected president of the Harvard Law Review. He began teaching at the UCLA School of Law in 1980, then entered legal practice and returned to teaching at the NYU School of Law in 1983. He joined the faculty of Columbia Law School in 1989, where he served as dean before taking the helm at Rice in 2004.

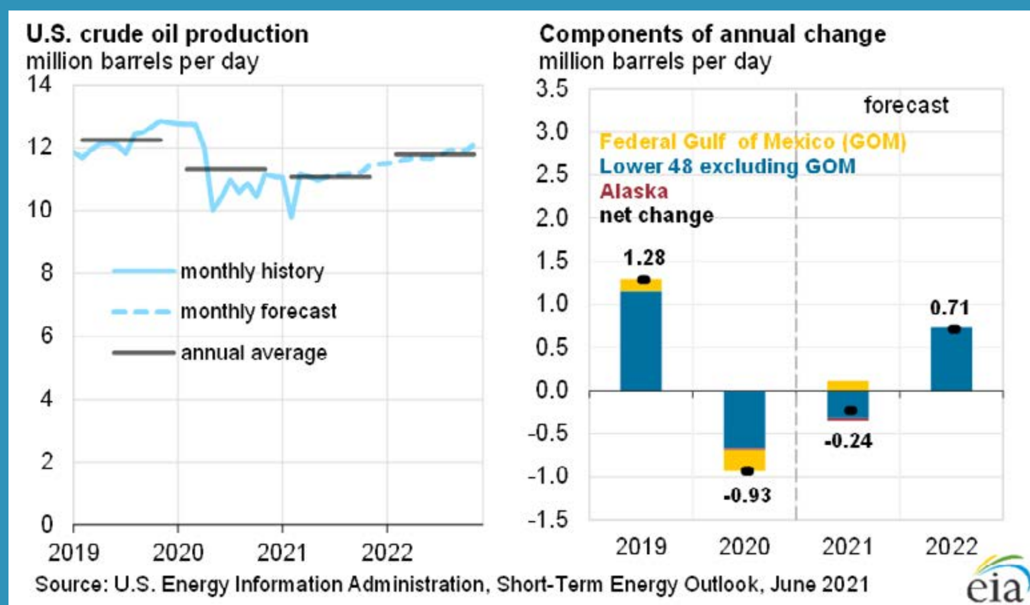
Leebron is only the seventh president in Rice's history. His long tenure is second only to the university's founding president, Edgar Odell Lovett, who held the post for 34 years.

A search committee will be formed to find the university's next president.

June Short-Term Energy Outlook

Forecast Highlights

Global Liquid Fuels



- The June Short-Term Energy Outlook (STEO) remains subject to heightened levels of uncertainty related to the ongoing economic recovery from the COVID-19 pandemic. The U.S. economy continues to rise after reaching multiyear lows in the second quarter of 2020 (2Q20). The increase in economic activity and easing of the COVID-19 pandemic have contributed to rising energy use. U.S. gross domestic product (GDP) declined by 3.5% in 2020 from 2019 levels. This STEO assumes U.S. GDP will grow by 6.7% in 2021 and by 4.9% in 2022. The U.S. macroeconomic assumptions in this outlook are based on forecasts by IHS Markit. Our forecast assumes continuing economic growth and increasing mobility as a result of the easing of the COVID-19 pandemic. Any developments that would cause deviations from these assumptions would likely cause energy consumption and prices to deviate from our forecast.

- Brent crude oil spot prices averaged $68 per barrel (b) in May, up $4/b from April. Brent prices were higher in May as global oil inventories continued to decline, albeit at a slower pace than in the first four months of the year. In the coming months, we expect that global oil production will increase to match rising levels of global oil consumption. The rising oil production in the forecast is largely a result of the OPEC+ decision to raise production. We expect rising production will end the persistent global oil inventory draws that have occurred for much of the past year and lead to relatively balanced global oil markets in the second half of 2021 (2H21). We expect Brent prices will remain near current levels in 3Q21, averaging $68/b. However, in 2022, we expect that continuing growth in production from OPEC+ and accelerating growth in U.S. tight oil production—along with other supply growth—will outpace decelerating growth in global oil consumption and contribute to declining oil prices. Based on these factors, we expect Brent to average $60/b in 2022.

- We expect U.S. gasoline consumption will average 9.1 million barrels per day (b/d) this summer (April–September), which is 1.3 million b/d more than last summer but still more than 0.4 million b/d less than summer 2019. Weekly consumption data reflect the Colonial Pipeline outage and subsequent increase in gasoline demand, but consumption both before and after this event indicate more gasoline demand than we had previously forecast. Our latest forecast also reflects IHS Markit's increased employment forecast. We expect U.S. gasoline consumption to average 8.7 million b/d in for all of 2021 and 9.0 million b/d in 2022.

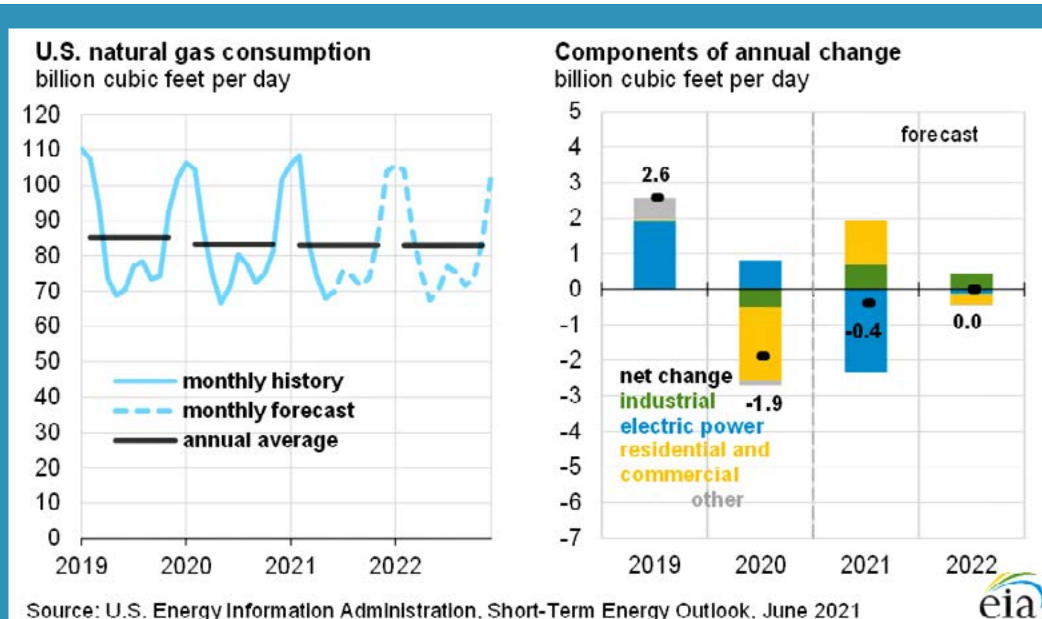
- For the 2021 April–September summer driving season, we forecast U.S. regular gasoline retail prices will average $2.92 per gallon (gal), up from an average of $2.07/gal last summer. The higher forecast gasoline prices reflect higher crude oil prices and higher wholesale gasoline margins. Wholesale gasoline margins have risen as a result of relatively low inventories and rising gasoline demand. Margins also temporarily widened because of outages on the Colonial Pipeline. These developments caused U.S. average regular gasoline retail prices to reach a monthly average of $2.99/gal in May, peaking at $3.03/gal on May 17, which were the highest monthly and weekly prices since 2014. We expect that prices will average $3.03/gal in June before falling to $2.76/gal by September. The drop in forecast retail gasoline prices reflects our forecast that gasoline margins will fall this summer in response to rising refinery utilization. For all of 2021, we expect U.S. regular gasoline retail prices to average $2.77/gal and gasoline retail prices for all grades to average $2.87/gal. Higher prices and more gasoline consumption would result in the average U.S. household spending about $570 (38%) more on motor fuel in 2021 compared with 2020.

- We estimate that 96.2 million b/d of petroleum and liquid fuels was consumed globally in May, an increase of 11.9 million b/d from May 2020 but 3.7 million b/d less than in May 2019. We forecast that global consumption of petroleum and liquid fuels will average 97.7 million b/d for all of 2021, which is a 5.4 million b/d increase from 2020. We forecast that global consumption of petroleum and liquid fuels will increase by 3.6 million b/d in 2022 to average 101.3 million b/d.

- We forecast OPEC crude oil production will average 26.9 million b/d in 2021 and 28.7 million b/d in 2022. OPEC crude oil production in the forecast rises from 25.0 million b/d in April to an average of 28.0 million b/d in 3Q21. Our expectation of rising OPEC production is primarily based on our assumption that OPEC will raise production by about 1 million b/d in both June and in July in response to rising global oil demand and seasonal increases in oil consumption for power generation for some OPEC members. It also reflects an assumption that Iran's crude oil production will continue to increase this year. Although sanctions that target Iran's crude oil exports remain in place, crude oil exports—according to ClipperData, LLC.—and production from Iran are up from most of 2020.

- According to our most recent data, U.S. crude oil production averaged 11.2 million b/d in March 2021, an increase of 1.4 million b/d from February. The March rise indicates that the production outages caused by the February winter freeze were temporary and that production came back online quickly. Because prices of West Texas Intermediate crude oil remain above $60/b during 2021 in the current forecast, we expect that producers will drill and complete enough wells to raise 2022 production from 2021 levels. We estimate that 2022 production will average 11.8 million b/d, up from a forecast average of 11.1 million b/d in 2021.

Natural Gas



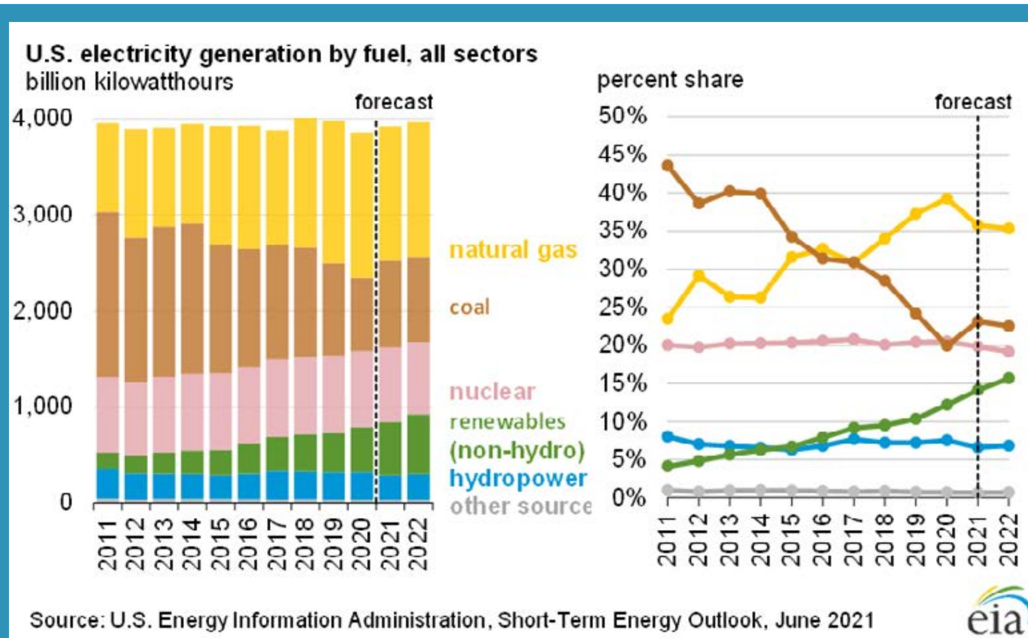
- In May, the natural gas spot price at Henry Hub averaged $2.91 per million British thermal units (MMBtu), which is up from the April average of $2.66/MMBtu. We expect the Henry Hub spot price will average $2.92/MMBtu in 3Q21 and $3.07/MMBtu for all of 2021, which is up from the 2020 average of $2.03/MMBtu. Higher natural gas prices this year primarily reflect two factors: growth in liquefied natural gas (LNG) exports and rising domestic natural gas consumption outside of the power sector. In 2022, we expect the Henry Hub price will average $2.93/MMBtu amid slowing growth in LNG exports and rising U.S. natural gas production.

- We expect that U.S. consumption of natural gas will average 82.9 billion cubic feet per day (Bcf/d) in 2021, down 0.5% from 2020. U.S. natural gas consumption declines in the forecast, in part, because electric power generators switch to coal from natural gas as a result of rising natural gas prices. In 2021, we expect residential and commercial natural gas consumption combined will rise by 1.2 Bcf/d from 2020 and industrial consumption will rise by 0.7 Bcf/d from 2020. Rising consumption outside of the power sector results from expanding economic activity and colder winter temperatures in 2021 compared with 2020. We expect U.S. natural gas consumption will average 82.8 Bcf/d in 2022.

- We estimate that natural gas inventories ended May 2021 at almost 2.4 trillion cubic feet (Tcf), which is 3% lower than the five-year (2016–20) average. More natural gas was withdrawn from storage during the winter of 2020–21 than the previous five-year average, largely as a result of the colder-than-average February temperatures that contributed to a drop in natural gas production. We forecast that inventories will end the 2021 injection season (end of October) at 3.6 Tcf, which would be 4% below the five-year average.

- Following a significant weather-related decline in U.S. natural gas production in February, U.S. dry natural gas production rose by 6.0 Bcf/d in March to 92.3 Bcf/d. We expect dry natural gas production will average 92.9 Bcf/d in 2H21 and then rise to 93.9 Bcf/d in 2022.

Electricity, Coal, Renewables, & Emissions



- We forecast that retail sales of electricity in the United States will increase by 2.3% in 2021 after falling by 3.9% in 2020. The largest increase in consumption will occur in the residential sector, where we forecast retail sales of electricity will grow by 2.8% this year. This growth is primarily a result of colder temperatures in the first quarter of 2021 compared with the same period in 2020. Much of the forecast increase in electricity consumption in the commercial and industrial sectors reflects improving economic conditions in 2021. We expect retail electricity sales to these two sectors combined will increase by 2.0% in 2021. For 2022, we forecast that U.S. retail sales of electricity will grow by another 1.4%.

- We expect the share of electric power generation produced by natural gas in the United States will average 36% in 2021 and 35% in 2022, down from 39% in 2020. The forecast share for natural gas as a generation fuel declines in response to our expectation of a higher delivered natural gas price for electricity generators, which we forecast will average $4.09/MMBtu in 2021 compared with an average of $2.39/MMBtu in 2020. As a result of the higher expected natural gas prices, the forecast share of generation from coal rises from 20% in 2020 to 23% this year but falls to 22% next year. New additions of solar and wind generating capacity support our expectation that the renewables share of U.S. generation will rise from 20% in 2020 to 21% in 2021 and to 23% in 2022. The nuclear share of U.S. electricity generation declines from 21% in 2020 to 20% in 2021 and to 19% in 2022 as a result of retiring capacity at some nuclear power plants.

- We forecast that planned additions to U.S. wind and solar generating capacity in 2021 and 2022 will contribute to rising electricity generation from those sources. We estimate that the U.S. electric power sector added 14.8 gigawatts (GW) of new wind capacity in 2020. We expect 16.0 GW of new wind capacity will come online in 2021 and 5.3 GW in 2022. Utility-scale solar capacity rose by an estimated 10.5 GW in 2020. Our forecast for added utility-scale solar capacity is 15.5 GW 2021 and 16.6 GW for 2022. We expect significant solar capacity additions in Texas during the forecast period. In addition, 4 GW to 5 GW of small-scale solar capacity (systems less than 1 megawatt) will come online each year during the 2021–22 STEO forecast.

- We expect U.S. coal production to total 600 million short tons (MMst) in 2021, which is 61 MMst (11%) more than in 2020. The increase is driven primarily by rising electricity demand. In 2022, we expect coal production to grow by an additional 5 MMst (1%)

- We expect U.S. coal exports to be about 81 MMst in 2021, 12 MMst (17%) more than in 2020. We expect most of this growth to come from rising demand for steam coal in Europe and Asia as increased steel prices during 2021 and 2022 drive exports. Forecast U.S. coal exports in 2022 rise by an additional 12 MMst (14%).

- We estimate that U.S. energy-related carbon dioxide (CO2) emissions decreased by 11% in 2020 as a result of less energy consumption related to reduced economic activity and responses to COVID-19. In 2021, we forecast energy-related CO2 emissions will increase about 6% from the 2020 level as economic activity increases and leads to rising energy use. We also expect energy-related CO2 emissions to rise in 2022, but by a slower rate of 2%. We forecast that after declining by 19% in 2020, coal-related CO2 emissions will rise by 15% in 2021 and then decrease by 1% in 2022.

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

Karrie Trauth
General Manager
Shell Trading US Company

May 2021 Commerce Club Featuring Karrie Trauth, General Manager, Shipping & Maritime Americas, Shell Trading (US) Company

The Need to Work Together to Decarbonize Shipping

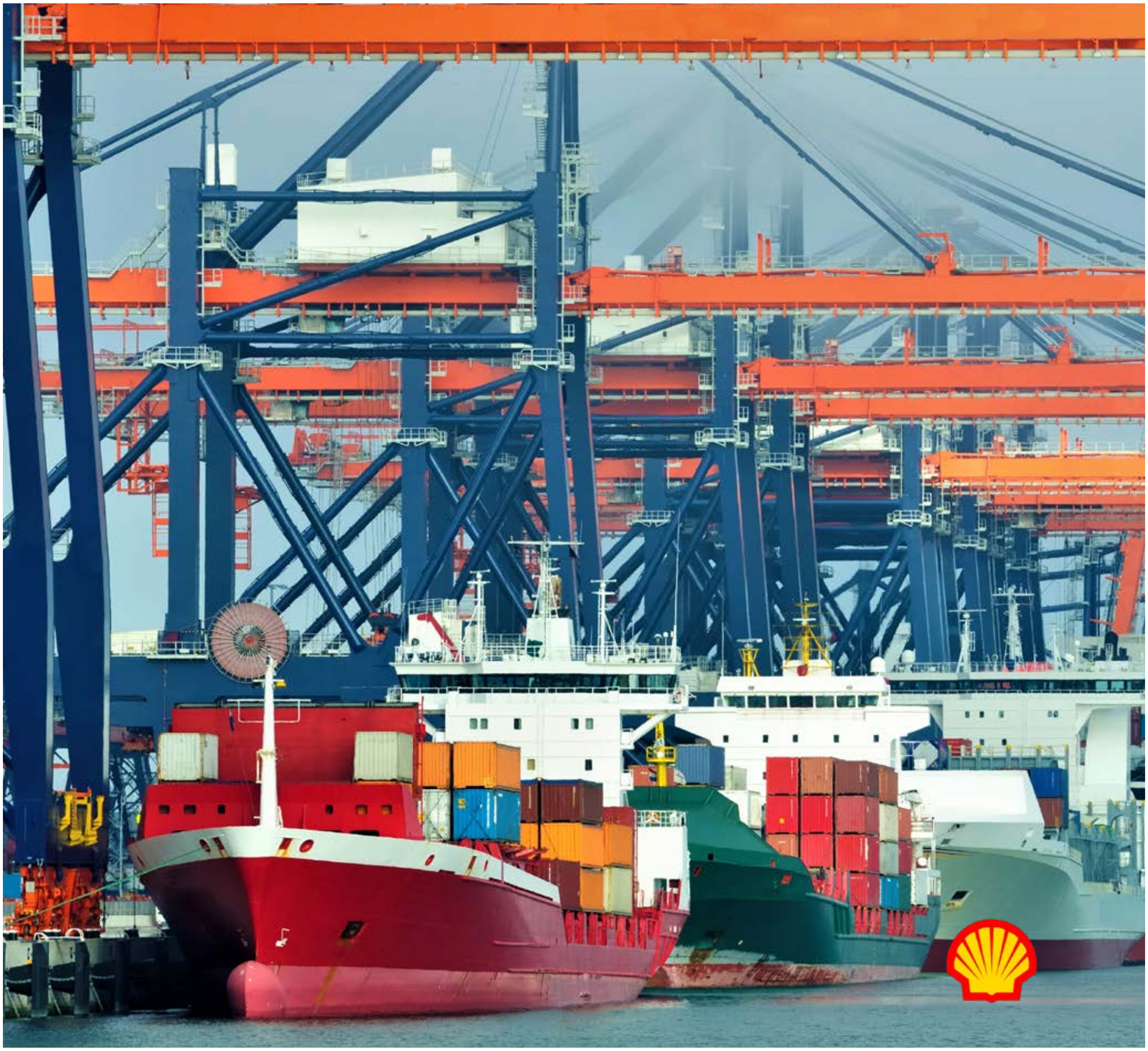


Photo courtesy of Shell Trading US Company

Photo courtesy of Shell Trading (US) Company

“It’s a privilege to have this opportunity to talk about decarbonization with you; to talk about alternative fuels, and to talk about port-wide efficiency,” said Karrie Trauth, general manager of shipping & maritime in the Americas for Shell Trading (US) Company, at the Commerce Club luncheon on May 13, 2021. Hosted at the Houston Marriott South, the event was the first in-person luncheon event hosted by the Port Bureau since March 2019. Trauth spoke to a sell-out crowd at the Marriott and additional attendees via Zoom.

“Today, I’m going to talk about how our industry – the shipping industry, the port community – can move forward and thrive in this admittedly complicated world, filled with the need for a wide variety of stakeholders, regulation, and a new world of reduced emissions. Specifically, we’ll talk about shipping sectorial decarbonization, and what it is going to take for us to get there,” Trauth said.

Trauth noted most of the world’s governments, including the U.S., have committed to the Paris Agreement but that shipping’s place in the Paris Agreement is complex. It’s an international industry and it isn’t easily included in international regulation.

“We have levers we can pull and choices we can take today,” stated Trauth, “and by taking those difficult decisions today, we do create more options for the future.”

Powering Progress

Trauth described the dual challenge for the shipping industry: it must grow to meet the demand of the world’s growing population with more ships and more voyages while radically reducing emissions. The International Maritime Organization (IMO) plans to see CO_2 intensity reduction by at least 40% by 2030 and by 70% by midcentury, while also reducing total greenhouse emissions by 2050.

“Shell,” explained Trauth, “thinks we can move faster.”

A study commissioned by Shell and Deloitte last year indicated “viable pathways” to meet the IMO goal and fully decarbonize by 2050. A key component of the undertaking by Shell is to partner with their customers to help them decarbonize.

The Shell strategy for accelerating the transition of their business to net zero emissions is known as “Powering Progress”, with a primary goal of becoming a net-zero emissions energy business by 2050. An important focus of the strategy is to work with their customers and across industry sectors to accelerate the transition to net-zero in step with society.

Trauth noted that part of the previously mentioned collaborative study’s work was to understand the views of senior executives from across the sector on barriers and potential solutions to decarbonizing shipping. The objective was to drive more common understanding and catalyze action. Representatives from the Houston port region as well as around the globe provided their insight.

Response included concerns about the current “deadlock” but also “enormous optimism” that conditions are changing for “fundamental change”. The result of the study’s conversation was the formulation of 12 solutions to tackle decarbonization, with solutions explored carefully to create a “roadmap” to 2030, with a long-term goal of meeting IMO’s ambition for 2050.

“But before we even get to those 12 solutions, we need to ensure we’re focusing every day and with every decision on operational efficiency which should be addressed throughout the entire transition process,” said Trauth. “This means we should consider measures such as fuel and lubricant quality, energy management, vessel design, smart navigation, and utilization. In our ports, it means consideration of everything from the power being used on site to digital options and opportunities to drive efficiencies and navigation.”

An example is Shell’s City Solutions Team and PSA [PSA Corporation Limited, formerly the Port of Singapore Authority] work over the last two years to understand the energy needs of the port’s Pasir Panjang Terminal and future Tuas Mega Port in Singapore. Together, they identified opportunities for carbon reduction, such as switching to cleaner fuel options and the study of a near-net zero energy building.

Trauth mentioned Shell’s efficiency projects locally, such as the trial of Pronto, a digital port exchange and port call application, in the port of Houston and as part of a collaboration with the Port of Rotterdam. The goal is to optimize all activities during a port call, thus helping to reduce emissions. Trials in Rotterdam showed a reduction in wait times of about 20%, offering the potential to create greater operating efficiency that results in CO_2 reductions. Given the concentration of global shipping volumes in a small number of ports, those interviewed for the report believe that port authorities have a key role to decarbonization. “If the largest ports algin around a common goal, they can act as a forcing function, enabling regulation and incentivizing green investments,” explained Trauth.

Fuel Options

In discussing current barriers to decarbonization the industry faces, Trauth highlighted the difficulty of asset replacement and fuels. The lack of clarity regarding future fuels and regulations makes ship owners reluctant to invest in net-zero vessels. Replacing the global fleet will take 20 to 30 years, and infrastructure to produce zero-emission fuels also needs to take place. This requires significant investment and time to scale up.

Shell sees hydrogen as the zero-emission fuel with the highest likelihood of success and believes that safe designs can be developed for marine use. As a fuel, it can be switched in to use with 'fuel-agnostic' fuel cells which have been developed using LNG first. Trauth said fuel cells will be a key technology to unlock the use of future fuels, as they are able to work using a range of fuel types, whether its hydrogen, ammonia, or LNG.

"Although Shell will continue to make the case for hydrogen as a part of shipping's future, it is not a competition," said Trauth. "We will need to work together, remain open to new ideas, test our views, and trial new technologies. ... Whatever the solutions for different sectors of the industry, we will need to coordinate our efforts."

For now, LNG is the only fuel available to help advance this critical technology, while also helping to lower greenhouse gas emissions. "To minimize cumulative emissions from the shipping sector before fuels are available in enough quantity for the global shipping fleet, LNG is the choice today," Trauth stated.

A question & answer session included the topics of carbon capture and sequestration, wind energy, cold ironing, and coalitions.

A related article by Karrie Trauth, "Decarbonizing Shipping Needs Action Today to Achieve its Long-Term Goals" is available in the April/May 2021 edition of the Port Bureau News or at txgulf.org/news.

Shell's "Powering Progress" strategy and its study, "Decarbonizing Shipping: All Hands on Deck", can be found at shell.com.

Join Today!

The Port Bureau helps over 230 member companies work together to promote cooperation and efficiency within the maritime industry. As a member you will have access to:

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PORT HOUSTON THE INTERNATIONAL PORT OF TEXAS
Shell
BWC Terminals BULK LIQUID STORAGE
KIRBY
MOL
Houston Mooring Co., Inc
Great Lakes Dredge & Dock
Vitol
REGIONS
Houston Pilots
C/PA
ENGINEERING & TERMINAL SERVICES
WATCO
Intercontinental Terminals Company
I.L.A.