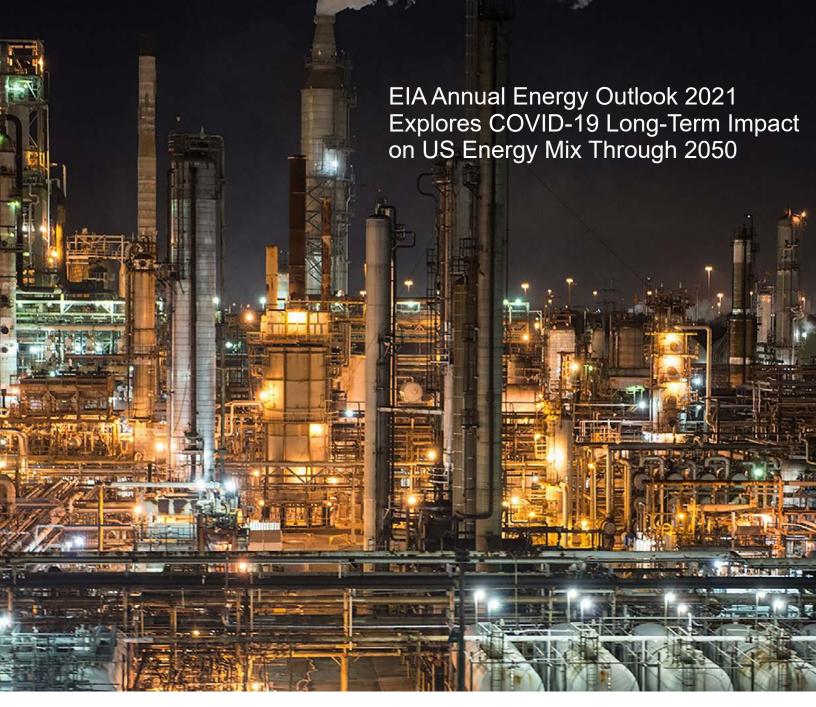
Greater Houston Port Bureau

Port Bureau News



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About the Cover

The U.S. will take years to return to 2019 levels of energy consumption and carbon dioxide emissions following the impact of COVID-19 on the U.S. economy and global energy sector. Photo courtesy of Lou Vest



The Port of Houston received notification on January 19 from the U.S. Army Corps of Engineers (USACE) that it was awarded a "new start" designation and \$19.5 million in federal funds to begin construction of the Houston Ship Channel Expansion Channel Improvement Project 11 on page 14.





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Port Bureau News

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Captain's Corner

Objects ARE Closer Than They Appear



The passenger sideview mirror gives me a much clearer view of the right side of the road than my rear-view mirror. Since its convex, it provides a wide angle for seeing more of what is coming up

- which in Houston may be anything from a motorcycle to a monster wide-load hauler. The downside is that it distorts the proximity, so the "objects in mirror are closer than they appear."

COVID-19 aside, navigating any business is a balancing act between looking at the road ahead while being aware of what might be overtaking us.

As you know, the Port Bureau board and staff are big supporters of better digital collaboration across all the private and public entities in the port. It holds the key to significant efficiency gains, safer, and more resilient supply chains, and lower emissions. However, if we are only looking forward on adopting digitalization across our port, we might miss what is in our side-view mirror—the issue of cybersecurity.

The recent cyber-attack on SolarWinds may have impacted more than 18,000 organizations. It seems to have started with a weak password somewhere and created a labyrinth of difficulties. An alert from the Cybersecurity & Infrastructure Security Agency (CISA) of DHS put it this way: "This APT (advanced persistent threat) actor has demonstrated patience, operational security, and complex tradecraft in these intrusions. CISA expects that removing this threat actor from compromised environments will be highly complex and challenging for organizations."

When I read this, I thought about how reliant we are on our digital infrastructure, especially since many companies have gone remote since COVID-19. And whenever we have reliance, we need to support it with resilience to ensure uninterrupted business. A Coast Guard friend of mine, Stephen Flynn, heads up the Global Resilience Institute at Northeastern University. He says, "Resilience is a concept to which virtually every discipline can contribute knowledge knowledge that will be helpful for managing the challenge of 21st century turbulence."

I am thinking resilience may be my new code word for side-view mirror. As we look forward, we need to ensure what we are building is resilience to threats, unseen on our sides. I also like that Stephen mentions that every discipline (everyone) can contribute.

While I know little of what goes into proactively protecting IT infrastructure, I cannot ignore it—we need everyone looking at that side-mirror and looking for threats. Incorporating this mindset helps everyone stay alert to even small anomalies that might pop up and strengthens support to security staff. Collaboration is always a good place to start.

The FBI has a program called InfraGard that is a partnership between them and private industry. They even have a maritime sector that meets quite frequently and assists dissemination of information and threats.

The other group that is working to harden our cybersecurity and increase our resilience is the Houston Maritime Security Collaboration Group. This is a joint venture between the Houston Ship Channel Security District, the Port of Houston Authority, and the Houston-Galveston InfraGard Area Maritime Security Committee. It is discussed in detail on page 8.

We might not all understand the technical aspects, but we can learn how to quickly respond to an incident or suspected threat. We can also learn what behaviors make us vulnerable to a cyber-attack. We are looking out the front window and collaborating to make our supply chain better, faster, and cheaper through the transparency of shipping schedules with projects like the PortXchange vessel and terminals scheduling platform. We also need to be checking our sidemirrors for cyber threats that are closer than they appear.

As always, the Port Bureau is here to bring information and support collaboration for progress on this issue – and all challenges for business in our maritime community. We would like to hear more about what objects you see gaining





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

National Maritime Cybersecurity Plan Bolsters Security Risk Management



Over the last few years, it has become increasingly clear that the maritime industry is not immune to cyberattack. In 2017, A.P. Moller – Maersk suffered organization-wide, an crippling cyberattack that cost the company approximately \$264 million to recover. In May 2020, the Shahid Rajaee port facility, the newest of two major shipping terminals in Bandar Abbas, fell victim to a cyberattack that brought down computers impacting vessel, cargo, and vehicle movement on the facility. These types of events, among others, have raised concerns regarding the cyber risks the U.S. maritime industry is facing.

Since 9/11 the focus of maritime security has been predominantly on physical security and had little in

the way of computer security. For example, the Maritime Transportation Security Act (MTSA), written in 2002, only contains verbiage to protect communication as it relates to items such as "aids to navigation". In mid-2010, new regulatory requirements in the form of 33 CFR parts 105 and 106 were written to further address security at facilities, including Outer Continental Shelf (OCS) facilities. This regulation made it a requirement to identify and assess radio and telecommunication equipment, including computer systems and networks, and to update or revise facility security assessments (FSAs) and facility security plans (FSPs) to address and mitigate any identified vulnerabilities.

Like the MTSA, the regulations made no specific reference to addressing cyber risks common in today's environment. In 2017, the U.S. Coast Guard tasked National Maritime the Security Advisory Committee (NMSAC) with reviewing the draft Navigation and Vessel Inspection Circular (NVIC 05-17) on cybersecurity. This was the first document to address the aspects of "cyber" as part of maritime security. The collaboration and commenting on NVIC 05-17 took several months. It was determined that a full rewrite of the verbiage in the MTSA and 33 CFR part 105 & 106 was not necessary. Subsequently, in March of 2020, the draft NVIC 05-17 was issued as NVIC 01-20, authorizing inspections use a cybersecurity checklist to begin on October 1, 2021.

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Since the writing of the two guiding documents (MTSA and 33 CFR Parts 105 & 106) for maritime security, technology, enhancements have occurred leading to greater interconnectivity of industry organizations, more reliance on thirdparty suppliers, greater dependency on cloud computing, and the convergence with non-traditional IT equipment.

The National Maritime Cybersecurity Plan ("the Plan"), written in December 2020 and published early January 2021, stems from the need to address cyber risks that years of technological improvements have brought to the industry. The new Plan seeks to bring about changes that will bolster cybersecurity in the complete digital maritime domain ecosystem.

The Plan is set to unify maritime resources. cvbersecurity its stakeholders, and initiatives as well as aggressively mitigate current and near-term maritime cyberspace threats and vulnerabilities. It identifies federal government priority actions to close maritime cybersecurity gaps and vulnerabilities over the next five years. The Plan's priority actions will evolve as the public sector, private sector, and international partners mature maritime cybersecurity cooperation and initiatives.

The Plan further encourages MTSAregulated facility owners to adopt a cybersecurityrisk framework. Knowing the risks and providing recommended steps to address them will provide organizations of any size an improved resilient technology infrastructure. The framework has yet to be defined but will likely follow a similar theme as the National Institute of Standards & Technology's (NIST) cybersecurity guide for the energy sector. Like that guide, it will likely pull from the current NIST cybersecurity standard-bearer for information technology, the NIST Cybersecurity Framework (CSF), and for operational technology, NIST 800-82, Guide to Industrial Control Systems (ICS) Security or the ANSI/IEC 62443 series of standards. The intent is to address cyber risk across the board by all maritime organizations to reduce the overall increased risk related to the inter-connection of systems and organizations.

Keys to the success of the National Maritime Cybersecurity Plan is the decree to deconflict reporting and compliance. There is a need for this as there are 'many cooks in the kitchen' per se when it comes to "who to call" and which regulatory area takes precedence. As an example, a terminal at a chemical facility may have MTSA and CFATS (Chemical Facilities Anti-Terrorism Standards) reporting requirements. It is hoped that deconflicting will place less burden on the asset owner/operators and provide better swim lanes for all in the maritime domain.

It is particularly important that the maritime industry identify its operational technology (OT) assets as it does contain safety implications from engine room to dynamic positioning to automated terminal cranes to motor control centers to emergency shutdown systems along with scheduling systems that work together in the vision of the Port of the Future. We must not only identify the assets but also the protection and detection schemes for the OT architecture. We will need to add technology to the cyber mission but will need to do so carefully and not to











impact integrity and operational performance. Furthermore, we must be prepared in our cyber incident response capabilities at the asset-owner level and at a national response level. Simultaneously, recovery and operational restoration must be a primary function with forensics and investigation set in tandem so that it works efficiently but keeps safety and real-time operations first and foremost.

It is especially important that the maritime domain workforce is adequately trained in cybersecurity and captures all those that interface with the systems from port terminal operators, maintenance, contractors, physical security personnel, and scheduling up to the enterprise business staff. Cybersecurity today includes the traditional information technology (IT) and is truly relevant to operational technology as these systems have further intertwined in the last decade. Many training programs and curriculum are offered that can be useful to employers and their employees, such as the SANS Institute and International Society of Automation (ISA) among others, to help prepare the workforce in this mission. It is good to see that the Area Maritime Security Committees are especially focusing on cybersecurity, but that local area InfraGard Chapters are also engaged in awareness and training topics as well. As a maritime community, we must further our collaboration. It also needs to be reciprocal with our federal partners.

With the growing dependence on cloud and outsourced information and technology services, understanding the level of security employed by the service organization is a small token of due diligence. Maritime organizations will be pressed to ensure that cybersecurity due diligence is being adhered to by third parties providing information and operational technology services via contract clauses. Additionally, the Plan calls for stronger requirements via U.S. General Services Administration (GSA) guidance to protect federal usage of maritime facilities. The guidance may impose restrictions on purchase of technology infrastructure from certain countries or companies, as determined by the federal government, that pose a threat to the United States' ability to retain full capability of maritime infrastructure.

In order to improve resiliency within the industry, it is critical that information be shared regarding attack methods. Often the flow of information is up to the National Response Center, CISA, or National Cybersecurity and Communications Integration Center (NCICC) with very little to no feedback returned. If information is returned from the federal agencies, it is often late and lacks actionable information. The Plan seeks to improve the sharing of information. There is a commonality in cyberattacks that is discovered during analysis of the incident in the form of indicators or digital fingerprints. The timely sharing of information from federal sources can help cybersecurity and information technology practitioners to identify and mitigate the threats in their own organization.

Implementing cybersecurity controls presents an additional cost burden to organizations of all sizes in any industry. The expense is disproportionate in small and medium size organizations which find their bottom lines are already tight. To make it easier for maritime organizations, the Plan seeks to improve grant funding availability for improving cybersecurity within the industry. This could potentially mean that a new grant avenue will be created solely for addressing cybersecurity projects — and not general port security which is provided for by a Port Security Grant.

The maritime industry is made up of organizations of all sizes, and it is imperative to implement an appropriate level of cybersecurity. Increased demand for — and connectivity of — information technology and operational technology presents as the Achille's heel for just about every industry. The attacks on IT and OT infrastructure around the world in different industries demonstrates that there are attackers in the world that have the potential for severely impacting imports and exports. The attack may not necessarily be on one's own organization; it could be on another in the industry that has the potential for impacting the movement of ships and cargo. It is for that reason that this Plan was put together so that organizations of all sizes will have a clear goal to meet, the resources needed to achieve that goal, and the ability to maintain it to ensure that they are not the cause or victim of an industry-wide attack on the maritime industry.



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Houston Maritime Security Collaboration Group



Each year various reports are released from think tanks indicating the risks of cyberattacks continue to grow. The speed and sophistication of the attackers, whether criminal or nation-state, has increased to the point that defenders typically have less than 20 minutes to react. Responding to attacks, often focused on specific industries, we can develop indicators derived from the attacker's tactics, techniques, and procedures, also known as TTPs. As members of the maritime industry, we are responsible for ensuring others understand the cyber threats that can impact us all.

That is the premise behind the development of the Houston Maritime Security Collaboration Group (HMSCG) that was formed in May 2020. This joint venture was funded by the Houston Ship Channel Security District, and working with the Port of Houston Authority, and the Houston-Galveston Infragard Area Maritime Security Committee/Cybersecurity Subcommittee that enable the freesharing of TTPs among trusted organizations on the Houston Ship Channel and regional port authorities.

The partnership formed the collaboration group of about 200 memebers from the joint venture organiztions and companies to share cyber threats and non-law enforcement physical security information. The HMSCG is administered by Chris Worley, Director, Information Security Officer, Port Houston.

In 2015, the President issued Executive Order 13691 to promote the sharing of private-sector cybersecurity information. The intent is to collaborate on the data as rapidly as possible regarding cybersecurity risks, threats, and incidents so that others can put into place measures that protect their environment. To act on this, the Houston Maritime Security Collaboration Group has partnered with the Maritime Transportation System (MTS) Information Sharing and Analysis Center (ISAC) to create the Houston Maritime Information Sharing and Analysis Organization or HM-ISAO.

Members of HM-ISAO must agree to conduct information sharing in a way that protects the privacy and civil liberties of individuals, ensures the confidentiality of member business information, and safeguards the shared data.

Sharing the knowledge of TTPs of a cyber-attack or physical security events provides member organizations indications and warnings useful for protecting themselves or identifying the activity within their technology environment. Often this knowledge comes late in the form of news articles or summaries from the industry. To be effective, the rapid transfer of knowledge is necessary for ensuring the greater good of the maritime sector. To enable the quick sharing of information among member organizationsquickly, the HM-ISAO utilizes Slack, a cloud-based secure instant messaging group chat program.

Since forming the group, the value of information sharing has paid dividends by preventing successful attacks at facilities. For example, phishing campaign attempts at one facility were thwarted by sharing realtime the threat to other members This resulted in removing the phishing emails before organizational employees had the chance to interact with their emails. (The FBI estimated between 1/2014-10/2019, they received complaints totaling more than \$2.1 billion in actual losses from business email compromise scams).

Being good stewards within the maritime industry includes being smart about securing our environment. Sharing the knowledge of threats amongst those who can be impacted is just one effort needed to protect the United States' critical infrastructure that has been entrusted to us.

To learn more about scams and safety go to: https://www. fbi.gov/scams-and-safety/common-scams-and-crimes/ business-email-compromise. If you would like more information on the Houston Maritime Security Collaboration Group, please email Chris Wolski at cwolski@porthouston. com.

FBI recommendation for protection against Cloud-Based Email Services

RECOMMENDATIONS FOR END USERS

- · Enable multi-factor authentication for all email accounts.
- Verify all payment changes and transactions in person or via a known telephone number.
- Educate employees about BEC scams, including preventative strategies such as how to identify phishing emails and how to respond to suspected compromises.

RECOMMENDATIONS FOR IT ADMINISTRATORS

- **P**rohibit automatic forwarding of email to external addresses.
- Add an email banner to messages coming from outside your organization.
- Prohibit legacy email protocols, such as POP, IMAP, and SMTP1, that can be used to circumvent multifactor authentication.
- Ensure changes to mailbox login and settings are logged and retained for at least 90 days.
- Enable alerts for suspicious activity, such as foreign logins.
- Enable security features that block malicious email, such as anti-phishing and anti-spoofing policies.
- Configure Sender Policy Framework, DomainKeys Identified Mail, and Domain-based Message Authentication Reporting and Conformance to prevent spoofing and validate email.
- Disable legacy account authentication.

WHAT TO DO IF YOU ARE A VICTIM

If you discover unauthorized payments, contact your financial institution immediately to request recall of the funds. Report attempted or actual fraudulent financial transfers to the Internet Crime Complaint Center at www.ic3.gov or to your local FBI field office, which can be found at www.fbi.gov/contact-us/field. The FBI may be able to assist financial institutions in the recovery of lost funds.

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Port Watch

What Has Been Lost May Be Found



Stumbled upon by a British sea captain, annexed by Germany, conquered by Japan and liberated by Australia as WW II came to a close. Nauru became the world's smallest island nation when it was granted its independence in 1968. Known for its vast phosphate reserves, it became one of the wealthiest nations in the world, on a per-capita basis, as it exported hundreds of thousands of tons of phosphates throughout Oceania. Yet, the 10,000 plus inhabitants nestled on 8 square miles of coral were spending far beyond their means despite the bounty derived from its highly-desired export. Ultimately, the phosphate deposits played out and the bulkers ceased coming. With nothing left to trade, Nauru went broke.

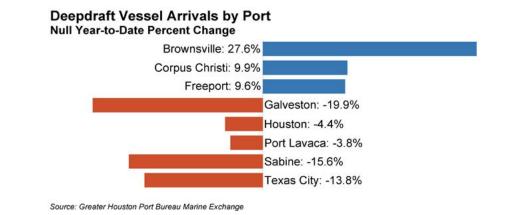
2020 certainly broke the back of many a small business that comprised the service sector. It also shook the firmament of the world economy as industrialized nations racked up record debt covering the lost income of hundreds of millions of idled workers precipitated by that which could not be seen. Fortunately, there was enough fuel in the tank to prevent a complete cessation of all trade between locked-down nations. As the clock struck midnight on the 366th day of the year, most Texas ports experienced a monthly uptick in vessel arrivals. In fact, three of the state's eight major ports set arrival records and are poised to do the same in 2021.

Perhaps one of the more remarkable port performances was that of Corpus Christi. It greeted 2020 on a high note and bade it farewell on an even higher one; recording its strongest quarter — arrival-wise in the port's history. December set an arrival record as Corpus Christi closed out the year 10% ahead of the previous year after a nearly 23% monthly gain. The flow of crude, LNG and LPG from its newest terminals has garnered the attention of many given its extraordinary volume of trade in a year that most ports would like to forget. The nearby and more diminutive port of Brownsville shared the spotlight with Corpus Christi as, it too, shattered 2019's numbers by well over 27%. This feat was even more impressive when one considers the final quarter of the year was its worst.

Rounding out the ports that are eligible to crow about 2020 is Freeport. It bested last year's arrival tally by over 9% after its most recent monthly gain mirrored its annual improvement. Freeport's final quarter was ever so close to the first quarter arrival numbers; however, the final quarter was the only quarter with two of its three months in the plus-hundred-arrival range. In effect, Freeport chalked up one-half of its triple-digit counts during the last three months of the year. As the port closed its books after a rather tumultuous year, it could be proud of the fact that it ranked fourth of all the Texas ports in arrivals.

Galveston's final month on the vessel arrival front saw a bit of a bounce with an 8% gain. Of course, that did not make much of a dent in its annual numbers which were 20% off last year's. The silver lining is that the port's final quarter was stronger than the previous two. Vaccinations potentially herald the return of the cruise business in short order but, the advent of the Age of Renewables does not harken that any favors are in store for the oil patch.

Sabine's monthly performance was nearly as robust as Corpus Christi's at 22%. Nonetheless, it ended the year – percentage wise – below all other ports save Galveston with a 15.6% fall. Undoubtedly, Sabine was a victim of the worldwide slowdown in economic activity as its tanker count fell 22% for the year and chemical tankers were off by nearly 18%. Granted, there was



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

Bulk: -6.3% Chemical Tanker: -3.7% Container: 4.8% General Cargo: -9.3% LPG: 15.0% Pilot Moved Tug & Barge: 7.5% Pure Car Carrier: -23.2% Tanker: -15.1%

one vessel-category darling – LPG tankers - which set an arrival high during the final month of the year. The most recent 22% jump yielded this category 7.6% more arrivals than last year.

Texas City could boast that its arrival percentages were not as moribund as those of Sabine and Galveston. Yet, unlike those two ports, it could not brag about December's arrival tally which fell by 4%. It can chalk up its 13% year-over-year drop to the same reasons Sabine languished. Hopefully, the rebound in demand of petrochemical exports will put a better face on 2021. Alas, wind farms and solar panels may foreshadow more of the same over the next four years.

Houston has seen better months after hosting 2.5% fewer vessels. Surprisingly, it did manage to eke out its best quarter for the year. Overall, 2020 lagged 2019 by 4.4%. Nevertheless, there were a few bright spots at year's end. Container ship arrivals ended the year nearly 5% ahead of 2019 despite a final monthly wane of 9%. Candidly, that does not tell the entirety of the story given that it's all about the number of containers. On the full-TEU import front, 4% more containers entered the port in the last year and last month. The more telling picture - from a macroeconomic perspective - is the fact the fullexport containers are off by 3% visà-vis 2019. LPG arrivals were up for the month by well over 6% resulting in a final year-over-year gain of 15%

Source: Greater Houston Port Bureau Marine Exchange

- a rather hearty performance when one considers tanker arrivals fell 15% in 2020 and chemical tankers ended just shy 4% in the red for the same period.

The non-BTU vessel categories experienced similar yearly declines. Bulkers ended December on a positive note with a 3.6% climb but lagged last year's count by over 6%. General cargo fared worse with a 9% deficit as compared to 2019 and car carriers chalked up the poorest year-over-year performance with 23% fewer arrival than the prior period. Meanwhile, ocean going tows were the surprise of the year with its 3rd consecutive monthly gain rounding out the year with 7.5% more arrivals as December gave way to January. Unfortunately, the same cannot be said for the inland tow community. It has yet to gain any ground after being hammered by the lockdown repercussions ending the year with 7761 fewer Houston Ship Channel movements. Yet, there are some nascent signs that the linehaul business is stirring back to life – for now.

There are certainly many changes in store with the dawn of 2021. Whether those changes encompass tax codes overhauls, regulatory mandates for renewables, firearm restrictions, internet censorship guidelines, or infrastructure overhaul initiatives, it is afoot and it will impact trade patterns. To what lengths, it is hard to say but, as the citizens of Nauru can attest to, change is inevitable – for better or for worse. After all, they have lived through feast and survived disease and invasion. Perhaps their nation's motto has much to do with their view of such things - "God's will first." Regardless, it certainly keeps things in perspective.

> **Tom Marian** Buffalo Marine Service buffalomarine.com



Port Bureau Updates

First US Offshore LNG Articulated Tug and Barge Ready for Operations

Q-LNG vessel enables Shell to serve more customers transitioning to lower emission marine fuel



Q-LNG Transport ("Q-LNG") and Shell Trading (US) Company ("Shell") have announced that the first offshore liquified natural gas ("LNG") bunkering articulated tug and barge ("ATB") in the United States, the Q-LNG 4000 is now ready for operations.

Designed to provide ship-to-ship transfers of LNG to vessels utilizing LNG and ship-to-shore transfers to small scale marine distribution infrastructure, the ATB is an integral part of the LNG infrastructure along the southeast U.S. coast. This critical milestone in the development of marine LNG infrastructure is an important step in the safe, reliable transportation and delivery of LNG in North America.

"As part of Shell's ambition to be a net-zero emissions energy business by 2050 or sooner, in step with society, we are working with customers across every sector to help them decarbonize," said Grahaeme Henderson, global head of Shell Shipping & Maritime. "We believe LNG can play a vital role in reducing emissions from shipping today, so I'm proud that we have developed the world's largest LNG fueling network of ports and bunker vessels on key trading routes. This ATB takes us a step closer to doubling the LNG fueling network by the mid-2020s and enabling further emissions reductions."

The barge complements Shell's existing global network of six LNG bunker vessels to meet the growing global demand for cleaner maritime fuels.

Shane Guidry, CEO of Q-LNG commented, "I'm pleased to have taken delivery and to begin our long-term service contract with Shell Trading. All of my companies, including Q-LNG, are focused on, and will continue to

do our part to design, build and operate vessels that will assist with the quest to decarbonize. We look forward to delivering extremely safe and reliable service, as we have done for Shell all of my career. I absolutely want to thank all of those with Shell who were very helpful throughout the build process and to especially thank everyone on my team, whom all remained focused and committed, with boots on the ground 24/7 to get this vessel across the finish line."

Compared to heavy fuel oil, LNG reduces greenhouse gas emissions by up to 21% for 2-stroke engines and up to 15% for 4-stroke medium speed engines as well as significantly reducing pollution from nitrogen oxides and particulate matter compared to conventional marine fuels. This fuel type also meets IMO 2020 sulphur regulations.



Join us for a Virtual Commerce Club February 11, 2021, 11:00 AM

The February Commerce Club will feature Dr. Dirk Sostman, Chairman of Houston Methodist Vaccine Scientific Advisory Committee, as the guest speaker .Dr. Sostman will discuss COVID-19 Vaccines: technology, early research study results, safety follow-up, and vaccination of the U.S. population.



Join professionals from maritime, transportation, and energy companies as well as other organizations in the port region via Zoom for a virtual Commerce Club event brought to you at no charge by our sponsors. For details and to register, click here. Registration is limited.

Magellan and Enterprise to Develop Joint **Houston Crude Oil Futures Contract**



Magellan Midstream Partners, L.P. and Enterprise Products Partners L.P. have announced that affiliates of the two companies have entered into an agreement to jointly develop a futures contract for the physical delivery of crude oil in

the Houston area in response to market interest for a

Enterprise Products with greater scale, Partners L.P.

Houston-based index flow assurance and price transparency.

The quality specifications will be consistent with a West Texas Intermediate ("WTI") crude oil originating from the Permian Basin with delivery capabilities at either Magellan's East Houston terminal or Enterprise's ECHO terminal in Houston.

"The industry-recognized quality and consistency of Midland WTI crude oil at Magellan's East Houston terminal, combined with flexible and reliable market access offered by both Magellan and Enterprise, make this joint effort a logical advancement for crude oil futures to provide added value for our customers, both domestically and globally," said Michael Mears, Magellan's chief executive officer.

"We are pleased to join with Magellan on this initiative, which will provide customers with enhanced flexibility, connectivity, market access and price transparency for their physical barrels of crude oil," said A.J. "Jim" Teague, co-chief executive officer of Enterprise's general partner. "This project will leverage the strengths of two major midstream infrastructure systems, featuring five pipelines serving the Permian Basin capable of delivering 2 million barrels per day of crude oil into the Houston market (with the potential for third-party pipelines to double the capacity of Permian Basin crude oil into the market), a robust Gulf Coast storage position, redundant connectivity to every refinery in the Houston area, and access to the largest network of crude oil export terminals located along the Houston Ship Channel."

Thank You to Our Sponsors



February 2021 Port 101

Port 101 Webinar February 26, 9-10 AM



Port Bureau president, Captain Bill Diehl, leads an informative virtual session on the port of Houston region. He explains the "Texas Chicken" and shares what's happening with the PortXchange trial and Project 11. Learn ways to become more involved in the maritime business community at our FREE Port 101 seminar

Registration is required. For details and to register go to: txguf.org/events.



Port of Houston Awarded New Start for Ship Channel

The Port of Houston received notification on January 19 from the U.S. Army Corps of Engineers (USACE) that it was awarded a "new start" designation and \$19.5 million in federal funds to begin construction of the Houston Ship Channel Expansion Channel Improvement Project. That project was authorized in the Water Resources and Development Act of 2020 as part of a larger legislative package passed by Congress in December.

The Houston Ship Channel Expansion, known as Project 11, will widen and deepen the channel for safer and more efficient navigation of vessels calling the port's eight public terminals and more than over 200 private facilities operating along the channel.

"To go from Congressional authorization to securing a pathway for construction in less than a month is phenomenal news," Port Houston Chairman Ric Campo said. "Project 11 will provide the greater Houston metropolitan area continued job growth and economic development opportunities, while improving air quality by reducing traffic congestion on the channel."

Port Houston Executive Director Roger Guenther called the designation a momentous occasion for the port.

"We're grateful for our bipartisan Congressional delegation and the many channel stakeholders who aggressively advocated to get this project authorized and funded," Guenther said. "Without their continued support, we wouldn't be in this position today."

Photo courtesy of Cooper/Ports America

Harris County Precinct 2 County Commissioner Adrian Garcia, who represents much of the port region, noted how important the ship channel is to the entire area, as well as the state and nation.

"This new development is a huge win for the 1.1 million people in Precinct 2 in part because it will bring about more economic development, which invariably leads to more jobs," Garcia said. "However, we must also look to invest in communities surrounding the Ship Channel and Port Houston; that means better roadways, focused flood protection and smart infrastructure. For the working families in my precinct to truly receive the full benefit from the channel expansion project, it's going to take a strong financial commitment."

The award is critically important for the port and channel stakeholders, as this designation and funding will allow the Corps and the port to execute a Project Partnership Agreement and for the port to begin construction on the critical elements of the project. For the past seven years, the port, bipartisan Congressional delegation, and channel stakeholders have been working together to make this channel improvement project a reality, including writing letters and making calls to influential federal decisionmakers in Washington, D.C.

In addition to the "new start" designation and \$19.5 million in construction funds, the Port also received \$55.5 million in annual operations and maintenance funding to ensure safe and efficient vessel traffic on the current channel.

Freeport Harbor Channel Improvement Project Receives Second Round of Federal Funding



The recently announced U.S. Army Corps of

Engineers (USACE) Fiscal Year (FY) 2021 Work Plan includes \$24.9 million in funding for the Freeport Harbor Channel Improvement Project (FHCIP). To date, Port Freeport has received \$43.9 million in federal funding for the project. Mobilization and preparation for dredging the first component of the FHCIP is underway. Great Lakes Dredge and Dock is scheduled to commence dredging in February 2021. The FY2021 funding will allow the Port in partnership with USACE to keep the next phase of the project on schedule for bid advertisement mid-summer.

The estimated total cost of the project is \$295 million, of which the federal government share is \$165 million and Port Freeport as the local sponsor will contribute the remaining \$130 million to be funded by the 2018 voter-approved bond package. This vitally important project will deepen the Freeport Harbor Channel from its current 46 feet to depths ranging from 51 to 56 feet.

"The inclusion of the FHCIP in two consecutive USACE Work Plans demonstrates the federal government's steadfast commitment to our channel deepening and partial widening project," Port Executive Director/CEO Phyllis Saathoff said. "A deeper, wider channel will allow for safer and improved navigation of the Freeport Harbor Channel while supporting our port and channel partners' needs for efficient transits using deeper draft vessels. Our region will greatly benefit from this project, as well as our local, state, and national economies."

The channel deepening project has been a strategic initiative for Port Freeport for many years, receiving Congressional authorization in 2014. The area's ongoing industrial expansion fueled by the production of shale oil and gas and the Port's proximity to fast-growing populations have intensified the need for this project. Port Freeport was one of two seaports nationwide to receive a "new start" designation in February 2020 for commencement of construction. In June, Port Freeport entered into a Project Partnership Agreement (PPA) with the USACE, and the first dredging contract was awarded in September.

"The advancement of the channel project could not have been accomplished without the support of our community and our port and industry partners," Port Commission Chairman Shane Pirtle said. "We cannot express enough gratitude to the Administration, Senators Cornyn and Cruz, Congressmen Weber and Olson, USACE, Governor Abbott, former Speaker Bonnen, and all others who have supported this effort and helped us achieve these milestones."

RightShip, INTERCARGO Announce Important New Quality Standard for Dry Bulk Sector to be Governed by New NGO"

RightShip and INTERCARGO have announced the launch of an important new quality standard for the dry bulk sector, DryBMS. The standard will be governed by a new NGO to be established later this year and will support the improvement of safety in the dry bulk segment.

Both RightShip and INTERCARGO have strongly and consistently advocated the need for significant improvements to dry bulk safety standards. In August 2020 both organizations combined their expertise to create a single framework for the whole industry.

Supported by the International Chamber of Shipping ("ICS") and Baltic and International Maritime Council ("BIMCO"), DryBMS now exists as a simple set of best practices and key performance indicators and raises the bar on safety, environmental and operational excellence.

RightShip's CEO Steen Lund says that he is confident that such a program will be supported and adopted: "We are proud to launch DryBMS to the industry. The standard is a product of extensive collaboration with many stakeholders within the dry bulk sector.

"We believe that this ensures the program will be supported and adopted across the industry as a whole. The rapid delivery of the initial consultation document means that we are a step closer to providing consistent, meaningful safety expectations for the dry bulk industry.

"Handing the standard over to a new and independent NGO will ensure the standard is protected and governed with the industry's best intentions at heart."

David Loosley, Secretary General & CEO of BIMCO, said: "Safety, of people, environment and assets is the primary focus of DryBMS, but the anticipated cascading effect is operational excellence which will benefit all stakeholders. We very much support this collaborative industry effort to develop a single standard and congratulate the efforts of RightShip and INTERCARGO in bringing this initiative to fruition."

Guy Platten, Secretary General of International Chamber of Shipping, said: "We're pleased to have worked closely with RightShip and INTERCARGO to bring this important new quality standard to the dry bulk sector.

The final draft version of the standard is now available to download on the DryBMS website at drybms.org, and the team will continue to review feedback sent to enquiries@ drybms.org.

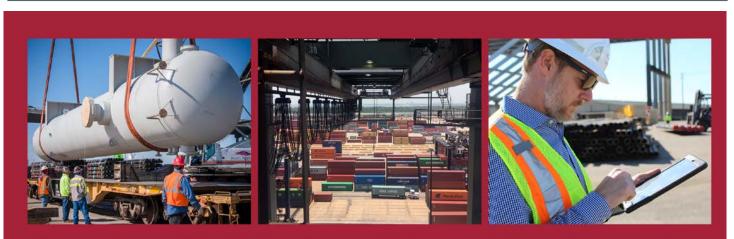
Energy Transfer Loads First VLEC Under Orbit Gulf Coast NGL Export JV with Satellite Petrochemical USA Corp



Seri Everest, the world's largest VLEC

Dallas-based Energy Transfer LP has announced the first Very Large Ethane Carrier ("VLEC") has been loaded under its previously announced joint venture with Satellite Petrochemical USA Corp., Orbit Gulf Coast NGL Exports, LLC ("Orbit"). The *Seri Everest*, the world's largest VLEC, departed from Orbit's newly constructed export facilities at Energy Transfer's Nederland terminal in Nederland, Texas, on January 17, 2021, to complete its maiden voyage. The vessel was loaded with more than 911,000 barrels of ethane destined for Satellite's Lianyungang ethane cracker in northeastern Jiangsu Province, China, the largest single shipment of ethane to date. Its anticipated arrival at Lianyungang Port is mid-February 2021.

Orbit's export terminal at Nederland, one of only three U.S. ethane export terminals, includes a 1.2 million barrel ethane storage tank and an estimated 180,000 barrel per day ethane refrigeration facility. Energy Transfer's Marcus Hook facility in Pennsylvania is also capable of handling VLECs. The combination of the two terminals represent over 50 percent of the U.S. waterborne export capacity. Under the joint venture with Satellite, Energy Transfer is the operator of Orbit's assets, which also include a newly constructed 20inch pipeline originating at Energy Transfer's fractionation and storage facilities in Mont Belvieu, Texas, for ethane deliveries to the Nederland export terminal as well as domestic markets in the region. In association with Orbit, Energy Transfer also completed its build-out of wholly owned infrastructure at Mont Belvieu to supply ethane to Orbit's pipeline, and at Nederland to load the ethane onto VLECs. Under separate agreements, Energy Transfer will provide Satellite with approximately 150,000 barrels per day of ethane under a long-term, demand-based agreement, along with storage and marketing services.



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Greater Houston Port Bureau Announces New Officers for 2021



Bernt A. Netland President & CEO ITC

The Greater Houston Port Bureau ("Port Bureau") board of directors elected Bernt A. Netland, president and CEO of Intercontinental Terminals Company, to serve as the chairman of the board, effective January 1, 2021. Additionally, the board of directors elected Vincent DiCosimo, Targa Resources, as 1st vice chairman; Kirk Jackson, Suderman & Young Towing Company, as 2nd vice chairman; and April Bailey, Amegy Bank, as secretary-treasurer.

"The Port Bureau sits at the center of the vibrant and dynamic business community that has its home along the Houston Ship Channel," said Chairman Netland. "The Port Bureau is about bringing people together, sharing information, solving common problems, and providing advocacy. Today we stand in front of several opportunities, the main being generational: Project 11 - the widening and deepening of the Houston Ship Channel. This project will transform the port's future, creating further growth, unmatched efficiency, and supreme safety.

Marcia Faschingbauer, Excargo, was also elected to the executive committee of the board of directors. New board members include Sharon Beemer, Vopak; Paul Matejowsky, ExxonMobil; and Adam Smith, BWC Terminals.

Bertling Logistics Announces Steve Walter as General Manager in Houston



Bertling Logistics, Inc., ("Bertling") has announced the appointment of Steve Walter as general manager of their Houston office. Walter stepped into his new position on January 1, bringing a wealth of commercial, operational, and management experience from his 23 years in the freight industry to his new role at Bertling. During

his career, Walter worked for both large multinationals as well as with industry specialist companies, most recently heading the business development team at CEVA Logistics.

Founded more than 155 years ago, Bertling specializes in the safe, effective and timely delivery of specialist cargo to challenging or remote locations. Their logistics activities cover project forwarding, resupply logistics, bulk liquid and general forwarding. Bertling's ship-owning/brokerage includes ownership and management of a fleet of modern bulk carriers and traditional ship and cargo brokerage.

Energy Transfer Announces Bradford D. Whitehurst as Chief Financial Officer



Energy Transfer LP has announced that Whitehurst has been

named as Chief Financial Officer effective immediately. Whitehurst, age 46, brings 20 years of experience to the position having served most recently as Executive Vice President and Head of Tax for the Dallas-based midstream company.

Whitehurst has also been responsible for managing Energy Transfer's Information Technology and Business Optimization divisions since joining the Partnership in 2014. He also serves on Energy Transfer's Investment Committee and is a director of USA Compression Partners, LP (USAC). Additionally, Whitehurst is a member of the board of directors for the Energy Infrastructure Council, having served in this capacity since 2017.

"We are very pleased to have Brad assume the position of Chief Financial Officer," said Tom Long, co-CEO of Energy Transfer. "His expertise and strategic counsel have been invaluable to us, not only as a member of our executive management team for the last six years, but as a longtime advisor to us on the significant M&A transactions that took place prior to him joining the Partnership."

Ric Campo Reappointed as Chairman of the Port of Houston Authority

Harris County Commissioners Court and Houston City Council met in joint session Monday, January 11, reappointing Houston businessman Ric Campo to continue to serve as the Chairman of the Port Commission of the Port of Houston Authority of Harris County, Texas. Additionally, during the virtual joint session, the governing bodies appointed Houston lawyer Captain Reginald McKamie to serve as Chairman of the Board of Pilot Commissioners for Harris County Ports.

"As one of the world's largest ports, ranked first in the nation for waterborne tonnage, Port Houston is vital to the region and helps drive the economy. We must have strong and steady leadership to guide us in all future projects,' said Houston Mayor Sylvester Turner. "I congratulate both Chairman Campo and Captain McKamie and will look to them to serve continuing to build community engagement around the Port."

Harris County Judge Lina Hidalgo expressed her support and said, "We are fortunate to have leaders like Chairman Campo and Captain McKamie advocating for our communities while steering our region toward continued growth."

In response to the reappointment, Port Chairman Campo said, "I appreciate the support of Judge Hildago, Mayor Turner, our County Commissioners, and City Council members."

EIA Annual Energy Outlook 2021 Explores COVID-19 Long-Term Impact on US Energy Mix Through 2050

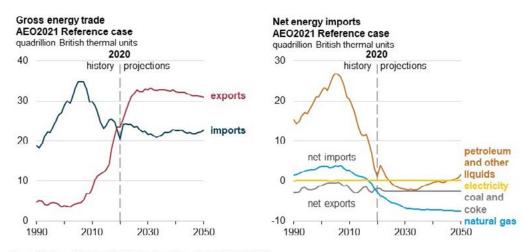


The United States will likely take years to return to 2019 levels of energy consumption and carbon dioxide emissions following the impact of COVID-19 on the U.S. economy and global energy sector, according to projections in the U.S. Energy Information Administration's ("EIA") Annual Energy Outlook 2021 ("AEO2021").

Projections in the AEO2021 are not predictions of what will happen, but rather, they are modeled projections of what may happen given certain assumptions and methodologies. By varying those assumptions and methodologies, AEO2021 can illustrate important factors in future energy production and use in the United States.

Energy market projections are uncertain because many of the events that shape energy markets — as well as future developments in technologies, demographics, and resources — cannot be foreseen with certainty. To illustrate the importance of key assumptions, AEO2021 includes a Reference case and side cases that systematically vary important underlying assumptions. EIA developed the AEO2021 by using the National Energy Modeling System (NEMS), an integrated model that captures interactions of economic changes and energy supply, demand, and prices.

EIA's projections in AEO2021 rely on a Reference case that serves as a baseline modeled projection designed to explore varying assumptions about technology, policy, and the economy. The Reference case examines a future in which slower growth in consumption in an increasingly energy-efficient U.S. economy contrasts with increasing energy supply as a result of technological progress in renewable sources, oil, and natural gas. Alternative cases in the report consider variations in economic growth, commodity prices and supply, and technology costs. EIA projections are subject to heightened levels of uncertainty due to the ongoing effects of COVID-19.



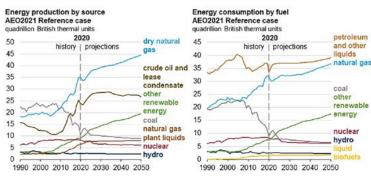
Energy Imports and Exports

Source: U.S. Energy Information Administration, Annual Energy Outlook 2021 (AEO2021)

Key takeaways from the Reference case

Returning to 2019 levels of U.S. energy consumption takes years; energy-related carbon dioxide emissions fall further before leveling off or rising.

- Energy consumption fell faster than gross domestic product in 2020, and the pace at which both will return to 2019 levels remains uncertain.
- Petroleum remains the most-consumed fuel in the United States, as energy-related carbon dioxide emissions dip through 2035 before climbing in later years.
- The energy intensity of the U.S. economy continues to fall as end-use sector intensities decline at varying rates.



Energy Production and Consumption

Source: U.S. Energy Information Administration, Annual Energy Outlook 2021 (AEO2021)

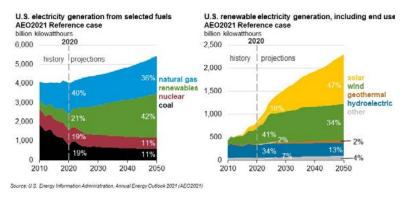
EIA projects that total U.S. energy consumption will return to 2019 levels by 2029, though that is highly dependent on the pace of U.S. economic recovery. In a case that assumes low economic growth, energy consumption may not return to 2019 levels until 2050. In most cases, EIA projects that U.S. energy-related CO2 emissions will decrease through 2035 before reversing that trend.

Renewable energy incentives and falling technology costs support robust competition with natural gas as coal and nuclear power decrease in the electricity mix.



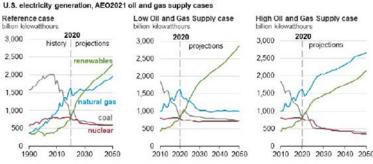
- Electricity demand grows at a modest rate throughout the projection period.
- As coal and nuclear generating capacity retires, new capacity additions come largely from natural gas and renewable technologies.
- Renewable electricity generation increases more rapidly than overall electricity demand through 2050.
- The cost-competitiveness of solar photovoltaic and natural gas combined-cycle units leads to capacity additions.

U.S. Electricity Generation and Share From Selected Fuels and Renewable Sources



EIA projects that electricity demand will largely return to 2019 levels by 2025. Renewable electric generating technologies are projected to account for almost 60% of the capacity additions from 2020 to 2050, and EIA projects that renewables' share of the electricity generation mix will more than double by 2050. The natural gas share will remain relatively flat at 36%, and the coal and nuclear shares will fall by about half, according to baseline projections in AEO2021.

U.S. Electricity Generation Levels From Selected Fuels and Renewable Sources



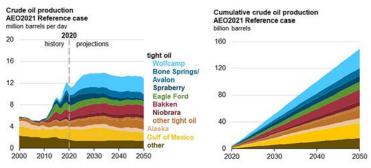
Note: Renewables category includes electricity generation from wind, solar, hydroelectric, geothermal, wood, and other biomass sources

Continuing record domestic energy production supports natural gas exports but does not necessarily mean growth in the U.S. trade balance in petroleum products.

- Amid uncertainty, the United States continues to be an important global supplier of crude oil and natural gas.
- Motor gasoline remains predominant despite a growing mix of technologies in passenger vehicles.
- Natural gas consumption growth between 2020 and 2050 is concentrated in two areas: exports and industrial use.
- The amount of crude oil processed at U.S. refineries decreased in 2020 because of lower demand for transportation fuels, but it returns to 2019 levels by 2025.
- Consumption of biofuels as a share of the domestic fuel mix increases in AEO2021.

EIA projects that the United States will continue to export more petroleum and other liquids than it imports, but the balance of imports to exports will be highly sensitive to supply, demand, and price factors. High oil and natural gas

U.S. Crude Oil Levels and Cumulative Production



Source: U.S. Energy Information Administration, Annual Energy Outlook 2021 (AEO2021)

supply or high oil prices could result in increased domestic production and net exports. If prices or supply remain high, the United States is likely to export more energy than it imports through 2050.

The *Annual Energy Outlook 2021 virtual release event* with EIA and the Bipartisan Policy Center was held on February 3. The full AEO2021 is posted on the EIA website at eia. gov/outlooks/aeo.





January Commerce Club Featuring Mike Emerson, Director, Marine Transportation Systems, US Coast Guard HQ

Wind Energy Farms, Space Flight Launches in 2021 Coast Guard Planning



Mike Emerson Director, Marine Transportation Systems, USCG

"I am a fan of the Houston Ship Channel. It's one of our more dynamic waterways, and I spend a lot of time assessing what policies and regulations we can put in place to make it safer and efficient – make it viable for marine commerce," said Mike Emerson, guest speaker of the Port Bureau's January virtual Commerce Club webinar. Emerson is director of Marine Transportation Systems at U.S. Coast Guard ("Coast Guard") headquarters in Washington, D.C. Emerson presented

"Making Way: Priorities for Safe and Efficient Maritime Commerce" to attendees at the virtual event.

Emerson said the Coast Guard was at full capacity during the past year and "did not lose a step" while working through the various challenges brought on by the pandemic, weather events, wildfires, and more. He anticipates new challenges still to come as the nation "ramps back up" and stressed the importance of the Ship Channel industry to the nation.

"You are central to any economic recovery scenario," said Emerson.

The Coast Guard's advocacy for maritime industry is defined by three lines of effort and are described in their recently published Maritime Commerce Strategic Outlook. These are (1) facilitating lawful trade and travel on secure waterways; (2) modernizing aids to navigation and mariner information systems; and, (3) transforming workforce capacity and partnerships.

The Maritime Commerce Implementation Plan was developed as a part of the Strategic Outlook. The plan outlines ten initiatives for supporting marine commerce, including enhancing cybersecurity capabilities, modernizing navigation services, and strengthening partnerships with maritime stakeholders.

Wind energy is an emerging addition to the Coast Guard's planning agenda for the waterways as the number of leases rise. "Wind energy, like LNG, will grow exponentially in the next year, especially considering expressed support for clean energy among many new federal officials," explained Emerson.

The Coast Guard's role is to advocate for maritime interests and safety and to be a part of the decision cycle. Every offshore wind project is different, well-funded, and could potentially impede or impact commercial shipping, fishing or other waterway users.

Emerson showed mapping for a system of "fairways to prevent any construction in any of the customary inshore or offshore shipping lanes that span from Florida all the way to Massachusetts, and eventually to Canada." Expectations are policy will be officially formalized soon to prevent any impediment to ship movements in the customary shipping routes. The Coast Guard has become the established authority for safety in navigation and in protecting maritime commerce as wind energy farms continue to grow.



Space launch and recoveries is another area of planning Emerson expects to grow. He anticipates two dozen offshore events in 2021 and weekly events thereafter. "What they would like to do is put out an announcement – sometimes on very short notice – that there is going to be space junk falling from the sky or an engine run or a hover test that will have a potential danger zone associated with it, and the Coast Guard would just shut down the waterway. We do that sometimes, to some extent, off of Cape Canaveral, but we have no intention of doing that off of Vandenberg, Boca Chica, or off of Tybee Island," said Emerson.

"The industry and the agencies supporting them for space operations would like us to advantage the space industry, but that would come at the cost of marine commerce. So, I urge you to keep an eye on that and welcome your feedback," he added.

Emerson also touched on automation, mentioning the voyage of an unmanned vessel that will follow the route of the Mayflower from England to the U.S. as part of the 400th anniversary of the event, and eNavigation objectives. The intent is to optimize assets and augment with virtual aids.

"I am doing a nationwide waterway assessment of every coastline and the inland river system to figure out if there are buoys that can be augmented or replaced or not," Emerson said. "That's a real slow process."

Speaking to the "way ahead", Emerson does not anticipate much uncertainty. He does expect climate change to "command the headlines". He noted that sea level rise is a concern and impacts the Coast Guard directly as well as extreme weather.

Throughout the presentation Emerson emphasized the importance of industry engagement with the Coast Guard in developing procedures and achieving goals. He concluded the presentation with a final encouragement to industry to continue to partner with the Coast Guard to achieve goals.

A Q&A session followed Emerson's presentation that included expectations under the new presidential administration, clean fuel strategies, the potential for a change in deployment of resources, and cyber security.

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