

Jacksonville, FL | Prime Osborn Convention Center Conference & Tours: November 6-9, 2017 Exposition: November 7-8, 2017

POST-EVENT SUMMARY









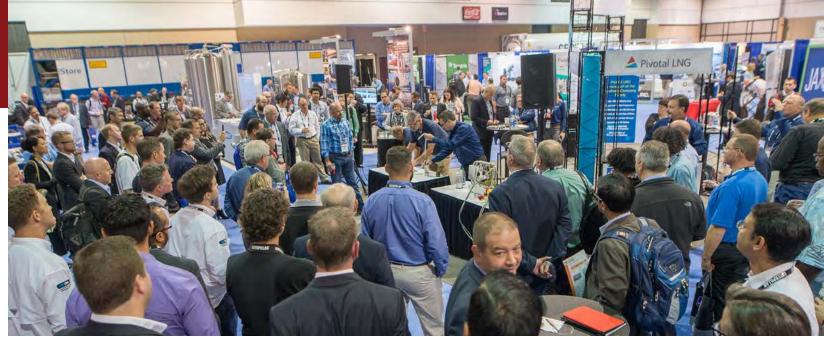


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product debuts and announcements.

The enthusiasm, commitment, and optimism for the development of the natural gas market was clear. Driven by pioneering fleet operators and infrastructure developers like our 2017 tour hosts—TOTE, JAX LNG, Crowley Maritime, Eagle LNG, and Florida East Coast Rail— incredible innovation and growth continues across all corners of North America. This exciting progress is made possible due to the leadership and fortitude from the fuel, equipment, and engine suppliers making significant investments to build the market. Attendees learned about the transformative growth that has swept the market, and gained firsthand insight into the most innovative natural gas marine, rail, mining, and power gen projects in North America and beyond.



The 2017 HHP Summit, held in Jacksonville, Florida, in partnership with the JAX Chamber, brought together natural gas and high horsepower stakeholders from across the globe for a week of cutting-edge programming, peer-topeer learning, a large and dynamic expo hall floor, off-site tours, innovative workshops, and numerous project and

Expo Hall Highlights, Product Debuts & Major Announcements

"As a long-time attendee at HHP Summit, this is one of the most worthwhile events in my entire year. You get to meet with every facet of the supply chain here and meet with so many different companies to create the solutions you need." -Matthew Jackson, Vice President LNG Business Development, Crowley Maritime



Caterpillar shared details on the company's new dynamic gas blending retrofit kit for the Cat 785C and 793D mining trucks which will allow engines to run on both diesel and LNG.



Carnival spotlighted the newly signed contract with Shell to supply fuel to power its two LNG-powered cruise ships, launching in North America in 2020 and 2022.

Hy-Lok USA showcased their array of tube fittings and valves for critical customer applications, which have been rigorously tested and conform to the latest international standards and specifications.





MSA – The Safety Company showcased their products that help protect facilities and vessels, including a flame detector, infrared based sensor, and the ULTIMA X5000 Gas Monitor for natural gas leak detection.





Altronic, LLC/GTI showcased a diverse lineup of products for the HHP market, including an electronic gas mixer, GTI bi-fuel system, actuators, port fuel injection valve, and an NGI 1000 ignition system.



Karl Dungs Combustion Controls showcased their high-pressure and low-pressure fuel supply gas trains which have global approvals.



Dixon Valve & Coupling Company displayed their cryogenic dry disconnects and breakaway couplings for fuel delivery systems, including marine bunking, locomotive tender cars, and truck loading.





Acme Cryogenics displayed their high-performance vacuum jacketed piping for all liquefied natural gas

applications.

Shell shared that a long-term charter agreement had

been finalized with Harvey Gulf International Marine

Cimarron Composites debuted their tube trailer with 18

Jupiter tanks. Notably, the Jupiter type IV tube has passed

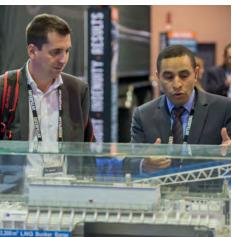
all DOT tests without exception, including the vacuum test.

to operate an LNG bunker barge built by Q-LNG Transport.

LightSail Energy debuted their LightStore 53-foot gas transport trailer, which is the highest capacity modules within the 80,000 lb. GVW class.







GTT North America highlighted the project partners involved in the development of the first ever LNG bunker barge in North America, with a display of a cross-section of their Mark III Flex membrane containment system.

GTT North America also shared that CMA CGM and Hudong-Zhonghua Shipbuilding (Group) Co. Ltd. had contracted the company to design the cryogenic tanks for the nine LNG fueled 22,000 TEU containerships announced at the start of the week.

Dresser-Rand displayed their LNGo[™] Micro-Scale Modular Natural Gas Liquefaction Plant, which is representative of the ones the company has installed in Pennsylvania, New Jersey, and Canada.



DRESSER RAND.



and gas piping.



Allen, Louisiana.



innovative on-dock bunkering system.



dual-fuel high horsepower engines.

W&O Supply, an exclusive distributor for PERMA-PIPE in the maritime industry, showcased the FUEL-GARD preinsulated piping system for maritime LNG, bunker fuel,

NuBlu Energy displayed a 100-to-1 scale model of the recently unveiled natural gas liquefaction plant in Port

CIMC ENRIC gave attendees hands-on access to its 40ft LNG ISO Tank which was developed for Crowley's

ComAp displayed their InteliBifuel MOBILE and InteliBifuel DENOX, which are control solutions for

Chart Industries showcased their LNG PERMA-CYL VHP high-pressure, high-flow for liquefied natural gas. The portable, easily installed tank can be filled by the Orca MicroBulk LNG Delivery System, allowing short-fill times with no gas losses under prescribed conditions.



Parker Hannifin displayed a full array of natural gas fuel solutions for the HHP market, including fuel metering valves, shutoff valves, fuel regulators, connections and hoses, and more.



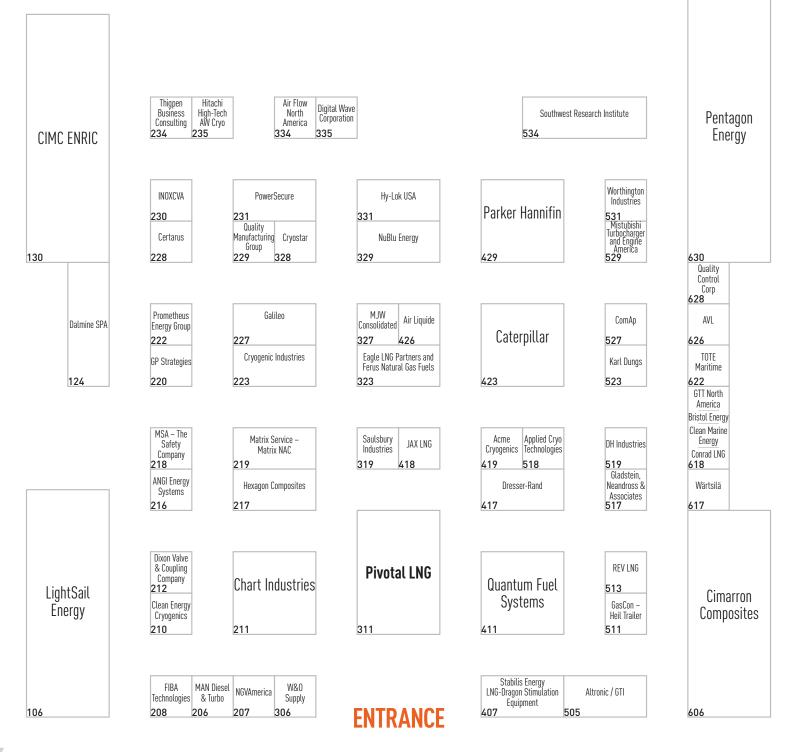
Quantum Fuel Systems, which has the highest capacity gaseous trailers in the industry, displayed a section of their Virtual Pipeline Trailer for CNG transport, as well as their back-of-cab CNG fuel system for class-8 trucks.



Pentagon Energy, a provider of CNG energy solutions, displayed a 53-foot CNG mobile transportation trailer with eight Type IV carbon fiber cylinders that each have a 7.000 liter capacity.



Expo Hall Map & Exhibitor List



-194 Lange

Exhibitor Booth Acme Cryogenics 419 Air Flow North America Corp ..334 Air Liquide426 Altronic. LLC / GTI505 ANGI Energy Systems216 Applied Cryo Technologies ..518 AVL Powertrain Engineering..... .626 Bristol Harbor618 Caterpillar 423 Certarus Ltd.228 Chart Industries211 Cimarron Composites606 CIMC ENRIC130 Clean Energy Cryogenics210 ..618 Clean Marine Energy527 ComAp618 Conrad LNG Cryogenic Industries223 ..328 Cryostar DH Industries ..519 Digital Wave Corporation335 Dixon Valve & Coupling Company212 Dresser-Rand 417 Eagle LNG Partners and Ferus Natural Gas Fuels323 FIBA Technologies208 Galileo227 GasCon511 Gladstein, Neandross & Associates517 GP Strategies220 GTT North America618 Heil Trailer International511 Hexagon Composites217



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Hitachi High-Tech AW Cryo, Inc.	235
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"TOTE is a big supporter of HHP Summit, and we will continue to be for many years. It's a good opportunity to meet a lot of important people in one place in a very short period of time. We're happy to be a part of it."

2017 Attendees



Crowley Maritime CRU Trading Co. **Cryogenic Industries** Cryoquip CRYOS Crvostar Cummins D.W. Allen Marine Services Daihatsu Diesel – America Daimler Trucks North America Dalmine S.P.A. DataOnline Department of Energy DH Industries **Digital Wave Corporation Disney Cruise Line** Dixon Valve & Coupling Company Dominion Energy Transmission Dongsung Finetec Dresser-Rand DTP Consultores Eagle LNG Partners ECO Vehicle Systems Eden Innovations Efioas Electro-Motive Diesel Emcara Gas Development Empresas Publicas de Medellín Enerflex The Energy & Minerals Group Energy for the Caribbean Energy Intelligence Group, Natural Gas Week ENESTAS SA DE CV Enaie EnSys Energy Eurotainer US EXSIF Worldwide ExxonMobil ExxonMobil Marine Fuels & Lubricants Federal Railroad Administration Ferus Natural Gas Fueling Solutions **FIBA** Technologies Fincantieri Bay Shipbuilding First Coast Navy Fire & Emergency Services Florida East Coast Railway Florida State College at Jacksonville Floridian Natural Gas Storage

Corban Energy Group

Cosmodyne

FortisBC **FOSS Maritime** GAC North America Galileo Garlock Sealing Technologies Gas Natural Fenosa Gas Technology Institute GasCon Gases del Caribe Gases del Pacifico Gaz Métro **GE** Transportation General Dynamics NASSCO Genox Transportation Genplant **Global Net Logistics GP** Strategies Greater Houston Natural Gas Vehicle Alliance Greater New Haven Clean Cities Coalition Group Ocean **GTT North America** Hale Hamilton Valves – Circor

Komatsu

Harley Marine Services Harvey Gulf International HDR Engineering Heil Trailer International Hendry Marine Industries Hexagon Composites Hexagon Lincoln Hitachi High-Tech AW Cryo, Inc. Honeywell Industrial Safety Indiana Harbor Belt Railroad International Transport Equipment Corporation Inversiones de Gases de Colombia Invercolsa J.B. Hunt Transportation Jack B Kellev Jacksonville Business Journal Jacksonville Port Authority Japan Petroleum Exploration

Hy-Lok USA

Infinne LNG

JAX Chamber

JAX LNG

JAXPORT

JC Carter

Jenmar Concepts

Karl Dungs, Inc.

J-W Power Company

INUXUA

Hyosung

Engineering Neptune Lines NES Cryo NETSCo Next Energy NG Advantage NGK Spark Plugs NGVAmerica Noble Energy

ACD Cryogenics Acme Cryogenics Advanced Clean Energy Solutions AE Valves **AES** Corporation Aaareko Agility Fuel Solutions Air Flow North America Corp Air Liquide Air Products Altronic, LLC / GTI

ANGI Energy Systems API Heat Transfer Applied Cryo Technologies Applied LNG APR Enerav Ariel Corporation Argus Media Atlas Copco **AVL Powertrain Engineering** BC Ferries

Biagi Bros Blue Origin Texas **BNSF** Railwav BP Energy Partners Bristol Harbor Broadwind Energy Broward Sheriff Fire Rescue Port Everglades Calfrac Well Services California Cartage Company Canaveral Fire Rescue

Carnival Caterpillar CB&I CENTA CenterPoint Energy Certarus Certarus I td Chart Industries Chevron Chevron Oronite Company CH-IV International

Clean Energy Cryogenics Clean Marine Energy CLEANCOR LNG CNGmotive ComAp Conrad LNG Continental Controls Controlled Natural Gas Copec

Coca-Cola Beverages Florida Consorcio Condugas Silar

-Peter Keller, Executive Vice President, TOTE

Keppel Offshore & Marine Kiewit Energy Group **Kinetrex Energy KLAW Products** "K" Line America Korea Maritime and Ocean University Liebherr Components LightSail Energy Lydall Performance Materials Mainstay Fuel Technologies MAN Diesel & Turbo Marine Service Marine Systems Marubeni Corporation Matheson Trucking Matrix Service-Matrix NAC Matson Navigation Company McAllister Towing & Transportation McNabb Trucking Metra Commuter Rail Miba Bearings Holding Mitsubishi Engine North America Mitsubishi Hitachi Power Systems Americas Mitsubishi Turbocharger And Engine America, Inc. Mitsui & Co., USA MJW Consolidated MKS Instruments Moran Towing **Morris Safety Services** MSA – The Safety Company MSD Port Canaveral MTU America **MVF Process Controls** Naval Air Station Jacksonville Fire Department Neptune Fire Protection Nestle Waters – Poland Spring New Fortress Energy NextEra Energy Resources

Norfolk Southern Railway

North Dakota LNG NorthStar Midstream Norton Lilly International NuBlu Energy NYK Energy Transport, USA NYK Line Odyssey Logistics & Technology Corporation OnQuest Optifuel Systems LLC PAO NOVATEK Parker Hannifin Pasha Hawaii Pentagon Energy Pentex Natural Gas Perma Pipe Pivotal LNG Port Everglades Port Manatee Port of Jacksonville Port of Rotterdam POSCO **PowerEnergyExperts** PowerSecure, Inc. Pratt Industries Praxair Preferred Service CNG Prometheus Energy Group, Inc. Promigas Puget Sound Energy 330 Quadren LNG Quality Manufacturing Group Quantum Fuel Systems LLC Railway Age **Ratermann Cryogenics** Raven Transport Holding Inc. Repsol Services **REV Hoopes Trucking REV LNG Ricardo Strategic Consulting Ring Power Corporation** Royal Caribbean Cruises S-5 Agency World Limited Saddle Creek Transportation Salix Saulsbury Industries Schoodic Energy Management SEA\LNG The Shearer Group Sempra LNG & Midstream Sequent Energy Management Shaw Development Shell

Siem Car Carriers Sins Oil and Gas Society for Gas as a Marine Fuel (SGMF) Solar Turbines Solberg Crankcase Ventilation Systems Solensa Southern California Gas Southern Company Gas Southern Petroleum Resources Southwest Gas Corporation Southwest Research Institute SPATCO Energy Solutions Spectrum LNG Stabilis Energy LNG-Dragon Stimulation Equipment Sumitomo Corporation Swagelok SWRI Tenaris Thippen Business Consulting Titan America TOTAL TOTE TransWorld Equipment Trelleborg Marine Systems, UK **Trinity Cryogenics** Trinity Industries de Mexico Trinity Nabrico U.S. Coast Guard U.S. Department of Energy U.S. Maritime Administration **UGI Energy Services UNF Coggin College of Business** United European Car Carriers United Rail UPS Uyeno Transtech Vane Brothers Vard Marine US W&O Supply, Inc. Wartsila Watco Terminal & Port Services Watlow Weldship Corporation Westport Fuel Systems Woodside Enerav Woodward World Fuel Services Worthington Industries Yokohama Kawasaki International Port Zeppelin Power Systems

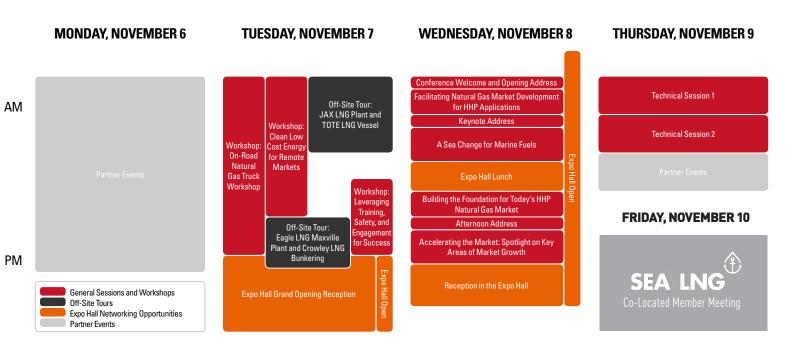
HHP Summit 2017 By the Numbers



"HHP Summit is such a great venue to bring people together that are collaborating across industries and across regions. It's the one time per year that we can come together and see our colleagues, competitors, suppliers, and customers in one place, allowing us to really make sure we're bringing the best product to market in the most effective way possible."

– Tim Hermann, President, Storage and Fuels, Southern Company Gas

Throughout the four-day Summit, HHP Summit attendees learned about LNG and CNG projects that are hitting the water, tracks, and gravel month after month. Details on the sessions, tours, and featured speakers are included on the following pages.





Agenda Overview

Southern Company Gas

CONFERENCE WELCOME: Pete Tumminello, Group President of Commercial Businesses

In the opening address for the conference, Pete Tumminello provided insight into the development progress for his organization's exciting joint venture project, JAX LNG, which will bring reliable liquefied natural gas supply to Florida. JAX LNG is constructing North America's first small-scale coastal LNG facility, located at Dames Point near Jacksonville, Florida, to service the marine, rail, drilling, mining, trucking, power generation, commercial, and industrial markets.

CROWLEY°

KEYNOTE ADDRESS: Thomas Crowley Jr, Chief Executive **Officer & Chairman**

As the board chairman and CEO of Crowley Maritime, Tom Crowley stopped by the HHP Summit this year to confirm his company's investments and continued forward commitment to LNG as the right fuel for the company's operations. He summarized the company's investment in two RoRo ships that will call upon Jacksonville and Miami/Everglades, the company's recent acquisition and growth strategy for distributing LNG to island communities, and how LNG will be considered for all new ships built in the future. Mr. Crowley stated that LNG—abundantly available throughout North America—is the best fuel option for marine operations, as it mitigates price volatility and significantly reduces vessel emissions. With the International Maritime Organization (IMO) 0.5% sulfur regulation being implemented in 2020, he heralded leaders such as CMA-CGM which announced their order of nine extra-large LNG container ships (the largest in the world) the prior day.

ENSYS

AFTERNOON ADDRESS: Martin Tallet, President

Martin Tallett spoke about the disruptive impacts the 2020 International Maritime Organization (IMO) low sulfur fuel requirements for marine fuels will have on the broader fuels market in both marine and land-based applications. With a requirement for marine vessels to use fuel with no more than 0.5% sulfur beginning on January 1, 2020, the marine sector will soon be a significant new consumer of refined product – whereas this market is currently using unrefined residual fuel oil to power its ships. The marine sector's new demand for refined product will compete with existing land-side consumers of diesel fuel (i.e. rail, truck, aviation, power generation, etc.). Given a host of interconnected issues related to the mix of crude supply, refining capacity limitations, and others, Martin's extensive expertise and his company's expert modeling and analysis predicts market disruptions (i.e. price increases and/or supply limitations) will result in 2020. With 18-month horizons, the futures market does not yet see the price impact of such disruptions, but Martin predicts major trade impacts as we get closer to the 2020 IMO implementation date. Of course, the IMO low sulfur fuel requirements have driven significant initial investment in LNG powered marine vessels, as evidenced throughout the week at the HHP Summit. Going forward, the IMO rule will present major challenges to refiners and fuel suppliers and thus provide strong impetus for all HHP sector participants to invest in CNG and LNG as a risk mitigation strategy based upon the low and stable cost of natural gas.







Guillaume Brossard Glenn Edvardsen Director LNG Market Chief Executive Officer Development **UECC** GazMétro







Peter Keller

TOTE

David Kailbourne **Chief Executive Officer** RELING

Executive Vice President



Sarah Smith Vice President Development & External Relations FORTIS BC



Frank Starke Global Product Manager Medium Speed Engines CATERPILLAR





Chad Verret Executive Vice President



Luca Volta **LNG Venture Manager** E**∦**onMobil

Featured Speakers



Paul Evans **Executive Vice President** ferus



Tim Hermann President A Pivotal LNG



Jim Hertwig Chief Executive Officer Florida East Coast



Marcel LaRoche **Director LNG Engineering** *≈*BCFerries



Andrew Moriarty President, Energy & **Chemicals Group** (CHART)



John Nadeau **Assistant Commandant** for Prevention Policy





Tom Strang Senior Vice President. **Maritime Affairs** Carnival



David Stubbs Director of Properties & **Environmental Compliance** JAXPORT 🛃



Amy Sweeney Director. Division of Natural Gas Regulation



Bill Hutchins Project Manager, LNG Marine Fuel Americas





Stephen Cadden Chief Operating Officer



Off-Site Tours: HHP Summit Attendees Gained Firsthand Insight Into Innovative Natural Gas Marine, Rail, Trucking & Infrastructure Projects

Tuesday, November 7 | 9:00 a.m. – 12:00 noon JAX LNG Plant and TOTE LNG Terminal Tour

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JAXLNG

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This "tour of many firsts" showcased the pioneering work of TOTE and Pivotal LNG, two of the earliest market movers in the North American LNG marine market. Attendees got a comprehensive look at the entire LNG fuel supply chain, starting with the JAX LNG production facility, a newly constructed small-scale coastal LNG facility which is the first in North America and a joint venture between Pivotal LNG and NorthStar Midstream. This facility will load North America's first LNG bunkering barge, which will then maneuver to TOTE's berth to provide LNG bunkering services to its two first-in-the-world LNG-powered container ships. From the JAX LNG plant, the tour continued to TOTE's Blount Island Terminal where attendees saw an up-close look at the innovative on-dock ISO-tank LNG bunkering facility that has served TOTE's vessels for more than a year. Attendees had a unique opportunity to watch the TOTE LNG container ship arrive at berth, escorted down the river by a Moran Tug.



Tuesday, November 7 | 1:00 p.m. – 4:00 p.m. UPS LNG and Jacksonville Transit Authority CNG Station Tour

Sponsored by

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Attendees gained behind-the-scenes access to tours of two high-volume natural gas fueling stations. The tour began with an inside look at UPS's LNG fueling facility, one of the largest in the world, which supports a 125+ truck operation. The facility sits onsite at the company's Jacksonville ground package hub, which is undergoing a massive expansion to increase its throughput capacity, and incorporate advanced technology and operations automation.

The tour continued at Jacksonville Transit Authority's public access CNG station—designed, built and maintained by Clean Energy—which provides fuel for the Authority's own fleet of natural gas buses; a fleet projected to increase to 100 vehicles over the next three years. Once fully-deployed, the transit fleet is forecasted to consume approximately 1 million DGEs of CNG annually which represents a greenhouse gas reduction of approximately 2,318 metric tons.



Tuesday, November 7 | 2:30 p.m. – 5:00 p.m. Eagle LNG Maxville Plant and Crowley LNG Bunker Terminal Tour

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Crowley's innovative on-dock LNG storage and bunkering operation was front and center of this tour. The two 1,000 cubic meter LNG storage tanks manufactured by Chart Ferox in the Czech Republic are each 170-feet long (exceeding the width of an American football field) and were truly a sight to see up close. These tanks hold more than 500,000 liters of LNG, which is stored on site and delivered to Crowley's LNG-powered ConRo ships via a cutting-edge pumping and bunkering system. Fuel for this storage and bunkering facility will be provided by the nearby Maxville LNG production plant, a brand new state-ofthe-art facility which includes a high-efficiency nitrogen-cycle Cosmodyne liquefier and a 1,000,000 gallon cryogenic tank provided by Matrix Service being constructed by Eagle LNG. The LNG plant and on-dock bunkering installation gave tour attendees a comprehensive look at the entire supply chain for modern LNG-powered vessel operations and other high horsepower customer segments.



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"HHP Summit has been a great experience. Our colleagues that work with us on our LNG project are well represented here. It's been valuable for our entire team."

– Fran Chinicci, Senior Vice President & Chief Operating Officer, Florida East Coast Railway



Thursday, November 9 | 12:45 p.m.– 4:00 p.m. **Florida East Coast Railway LNG Operations Tour**

Hosted by

Florida East Coast

In November 2014, Florida East Coast Railway (FECR) initiated the deployment of 24 new LNG-powered locomotives. These 4400 HP Tier 3 emissions compliant locomotives now make up FECR's entire mainline thru-haul fleet operating between Jacksonville and Miami. With the conversion project just recently completed, attendees received the first-ever tour of LNG operations at FECR's Bowden Yard in Jacksonville. Attendees gained hands-on access to an LNG-powered locomotive and tender car, and a first-of-its-kind LNG fueling station for railcars, built by Clean Energy. FECR also displayed an ISO container used to transport the gas, and one of the LNG-powered Raven Transport trucks that hauls LNG tanker delivery trailers..

Facilitating Natural Gas Market Development for **HHP Applications**

A diverse panel of stakeholders discussed the forward opportunities and growth of the natural gas HHP market. Panelists discussed their outlook for growth in the marine, rail, and power generation segments, as well as the movement of natural gas by rail car.

A core theme shared by each panelists was the need for collaboration—at the project level, national level, and global level - in order to continue to mature and grow these various end-use markets. A major key to widescale project deployment was having consistent rules and regulations in every market each company does business in, as well as a set of credible data that operators could reference when making investment decisions.



A Sea Change for Marine Fuels

This exciting panel gathered the true pioneers of LNG marine projects from around the globe, with executives from BC Ferries, TOTE, UECC, Carnival and Harvey Gulf represented. The panelists discussed unique infrastructure, bunkering, and safety considerations that each organization faced, as they move passengers and cargo using a diverse range of vessels—from ferries, to container ships, car carriers, cruise ships, and supply vessels. Attendees also learned about the details of brand new partnership announcements that took place during HHP Summit, including the finalization of a long-term charter agreement between Shell and Harvey Gulf International Marine to operate an LNG bunker barge built by Q-LNG Transport. Carnival also announced that it had selected Shell to supply fuel to power its two LNG-powered cruise ships, launching in North America in 2020 and 2022. The momentum taking place in the LNG marine market is incredible!

Building the Foundation for Today's HHP Natural Gas Market

Leading fuel suppliers shared their perspective on the continued growth of the natural gas powered HHP market. Each panelists discussed how they entered the market and how both marine and landside projects have played an important role in allowing them to make significant investments in LNG production and improved supply chains-infrastructure that is now serving as the foundation for market growth.

It was noted that as this supply has increasingly come on line, customers have become increasingly confident in the ability to switch their operations to LNG; however, a comprehensive engagement and educational effort is still required to assist end users in making this conversion. Pivotal LNG noted that collaboration, training for first responders, and education of both customers and the public about the safety and reliability of LNG were key elements of this process. Fortis BC commented on how the industry is asking customers to make operational changes by moving to LNG, and emphasized the need for "change management," in order for there to be continued success.

The panel acknowledged the dip in the price of oil in recent years, but all confirmed that they have continued to grow their businesses. It was even noted by Eagle LNG that the volatility of oil prices, including its unprecedented price drop in 2014, turned out to be good for the natural gas market, forcing discipline in the market, and a focus on quality and delivering successful projects for customers. All agreed their LNG business is expanding and are proud of their diligence to ensure high standards of safety and operations.

Accelerating the Market: Spotlight on Key Areas of Market Growth

Leading fuel and technology providers—ExxonMobil, Chart Industries, and Caterpillar—discussed their outlook on LNG becoming a high demand fuel that will contribute to the GDP, noting the biggest natural gas market drivers are the benefit to the environment and price stability.

Leveraging Personnel Training, Safety & Stakeholder **Engagement for Project Success**

Representatives from the US Coast Guard, regional fire departments, and other industry stakeholders joined us at the Florida State College Fire Academy to hear from pioneers like FECR and BC Ferries on how they leveraged internal and external training and stakeholder engagement to drive project success, and for live demonstrations on the physical properties of LNG and safety handling procedures.

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Providing a rail end-user perspective, Florida East Coast Rail shared why they committed to converting their mainline operations to LNG (24 locomotives in 2017), noting that they believe LNG will be a preferred fuel for their sector. They also shared why they were a first mover in transporting LNG as a product by rail, pointing to the strong fuel price economics for customers in the marine and power gen sectors.

> Rev LNG discussed the emerging use of LNG as a backup fuel supply for power plants using pipeline natural gas to generate electricity. Their firm is working with power plants across the northeast to ensure they have LNG stored onsite for high demand situations such as a polar vortex, when natural gas from the pipeline is diverted to residences, hospitals and key commercial customers.

> > The entire panel agreed we will see more demand for natural gas as it continues to contribute to the global economy, noting that the industry needs to work together to make natural gas a "normal" fuel rather than an "alternative."

CNG Project & Technology Highlights

While LNG has often taken center-stage at the annual HHP Summit – especially this year in Jacksonville with three LNG plants being constructed and extensive LNG end-user activity in the marine, rail and power generation segments - North American growth within the compressed natural gas (CNG) fueled HHP market has been substantial. In the U.S. and Canada, there is over 200,000 MCF of installed CNG compression capacity to serve downstream HHP market segments. If converted to LNG gallons, this translates to more than 2.5 million gallons of daily LNG production.

feet lona

FEATURED SESSION:

Spotlight on Rail: The Indiana Harbor Belt CNG Locomotive Program

This session provided a comprehensive overview of the Indiana Harbor Belt (IHB) CNG rail project, including details on the dual-fuel engine system, onboard CNG fuel storage design and integration into the overall locomotive, the CNG refueling approach and design, natural gas safety analysis, and more. Representatives from IHB and all of IHB's key suppliers for this project presented, including Optifuel Systems, Mainstay Fuel Technologies, Hexagon Lincoln, ANGI Energy Systems, and the Gas Technology Institute.





LightSail Energy debuted their LightStore 53-foot gas transport trailer, which is the highest capacity modules within the 80,000 lb. GVW class.



FIBA Technologies displayed their Hydrogen & CNG Type IV Composite Pressure

Vessel, an ultra-lightweight vessel for gas transportation, available from 6 feet to 25



Cimarron Composites debuted their tube trailer with 18 Jupiter tanks. Notably, the Jupiter type IV tube has passed all DOT tests without exception, including the vacuum test.

Pentagon Energy, a provider of CNG energy solutions, displayed a 53-foot CNG mobile transportation trailer with eight Type IV carbon fiber cylinders that each have a 7.000 liter capacity



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CNG has proven to be an extremely cost-effective and operationally reliable diesel displacement strategy in multiple HHP segments. Throughout the Summit, exhibitors and speakers demonstrated the incredible advancements in technology, logistics, and supply chain options that are helping drive market progress and deliver environmental and cost savings benefits to end-users.

FEATURED TOUR:

Attendees visited the Jacksonville Transit Authority's public access CNG station—designed, built and maintained by Clean Energy—which provides fuel for the Authority's own fleet of natural gas buses. Fueling of the CNG buses began in December 2015 with the rollout of the First Coast Flyer Bus Rapid Transit "Green Line." Once JTA has rolled out all 100 of its planned CNG buses, the transit fleet is forecasted to consume approximately 1 million DGEs of CNG annually which represents a greenhouse gas reduction of approximately 2,318 metric tons. Attendees also toured the bus maintenance facility, modified to accomodate CNG buses.



FEATURED SESSION:



Jacksonville Transit Authority CNG Station Tour

A Spotlight on the Growing Use of CNG Delivery Systems for HHP Applications

This panel highlighted a number of examples where CNG has provided reliable and low-cost energy to a number of remote power generation projects, tier 4 engine solutions, and other applications looking for a price advantage, even in a low diesel cost environment. Attendees learned about supply chain and sourcing considerations, operational needs, and how to decide if CNG is the fuel for an operation. Presentations were given by CNG industry experts at Hexagon Lincoln, Certarus, Quantum Fuel Systems, Cimarron Composites, and CIMC.

To learn more visit hhpsummit.com

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HHP Summit is organized by Gladstein, Neandross & Associates (GNA), a leading US-based consulting firm specializing in market development for alternative fuels, vehicles, and equipment. For more than 20 years, GNA has been actively involved in the development of the markets we serve via both its consulting practice and its conference production experience. GNA has produced many of the nation's leading clean and advanced technology events that have brought together tens of thousands of attendees. Prior events include the national Faster Freight – Cleaner Air conference series, the Advanced Clean Transportation (ACT) Expo, the Low Carbon Fuels Expo, the National Biomethane Summit, the Rethink Methane Summit, the NGV Fleet Summit, and more. GNA has teamed up with leaders throughout the North American natural gas industry to create and produce this summit as a forum for discussions on this critical topic. **www.gladstein.org**