



Natural Gas for High Horsepower

# SUMMIT

October 11-13, 2016

Chicago, Illinois

McCormick Place



# CONFERENCE PROGRAM



RAIL



MARINE



MINING



DRILLING



PRESSURE PUMPING



POWER GEN

PRESENTING SPONSORS:  
**CATERPILLAR**



[hhpsummit.com](http://hhpsummit.com)

STAY CONNECTED



@HHPSUMMIT



# Sponsors

## Presenting Sponsors



## Principal Sponsors



## Industry Sponsors



## Lanyard Sponsor



## Wi-Fi Sponsor



## Name Badge Sponsor



## Beverage Break Sponsors



## Media Partners



## Endorsing Organizations





# Table of Contents



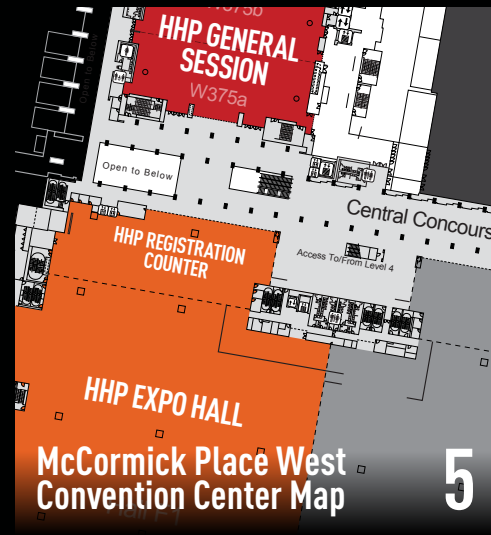
2

Sponsors



Welcome Letter

4



5



6

Keynote Speakers



7

Featured Speakers



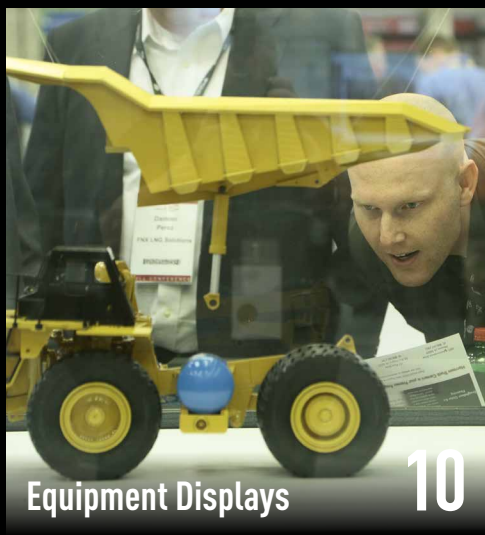
8

Expo Hall Map



9

Exhibitor List



10

Equipment Displays



11

Agenda

# Welcome to Chicago for the 2016 High Horsepower Summit.

We are excited to share a wealth of insight on the latest natural gas market momentum with you this week.

As we gather for this year's annual HHP Summit, we look at the dynamic landscape of projects that will be highlighted here in the next couple of days. While the global energy market has challenged some of our prior business plans, we see an incredibly resilient market and one where growth continues in several key market segments. In the last several weeks leading up to the show, we have seen several significant new project announcements, reinforcing the growing demand and opportunity in the natural gas-powered HHP sector.

The LNG marine market leads the pack with new deployments happening in all parts of North America. With the Harvey Gulf and TOTE projects moving full steam ahead, new LNG vessels have hit the water in Quebec while several more are on track to be deployed in Vancouver in both private and public fleet operations. In the next few years, dozens of additional LNG-powered marine vessels will take the water in the Caribbean, Atlantic, Pacific, Gulf of Mexico and Great Lakes. Of course, the recent announcement from Carnival Cruise Lines is sure to help accelerate continued growth in the marine sector as other cruise lines are expected to follow suit.

On the land side of the HHP market, we have seen more progress in the rail sector as Class I operators continue their demonstration project efforts, and Class II and III railroads in Florida and Indiana work to convert their operations to run on natural gas in both the compressed and liquefied form. Meanwhile, a project in Alaska has recently broken new ground as the first railroad in North America to move LNG as a commodity. The market continues to accelerate as standards, technology, demonstrations, and deployments are increasingly established.

Several blockbuster announcements were made in recent weeks with mines throughout North America making "all in" commitments to a forward natural gas fueled pathway for both on-site power generation and mine process, as well as a full mine haul truck fleet conversion to operate LNG. From Mexico to the northern reaches of Canada, and several locations in between, natural gas and innovative LNG fuel supply chains are being used to power both mine haul truck and various thermal and electric production needs. With a growing base of LNG production facilities and innovative natural gas engine technologies being developed to meet the needs of this market, considerable growth is expected in this sector, particularly as sustainability considerations and environmental regulation drives procurement decisions for cleaner and lower emission technology.

Similar to the mining sector, from the Caribbean islands to the northern reaches of Canada and Alaska, we have seen significant and important growth in the use of natural gas to fuel remote operations such as power generation, boilers, thermal loads, utility pipeline systems, and other off-pipeline industrial applications. Virtual pipelines carrying natural gas in both compressed and liquefied form are transforming the landscape by providing a stable low-cost and low-emission fuel. As global demand for reliable, clean and price stable energy continues to increase, so too will the use of natural gas in these remote applications.

And last but certainly not least, the oil and gas E&P sector—where much of this natural gas-powered HHP work started—continues to push forward in spite of very challenged markets for their products. We have seen rig activity increase in the last few months, and natural gas operations continue to play an important role in this sector. As we move towards the final implementation of the US EPA Tier 4 rule, natural gas will play an important compliance role for those looking for low emissions and operational costs.

Despite the current oil price dip, the North American natural gas market has shown incredible strength and forward growth. Savvy executives know that the time to invest is when the market is down in order to recognize the gains as the market goes up. As oil prices inevitably increase over the next few decades—over the asset lives of new HHP equipment being purchased today—and environmental regulation on NOx/ozone and carbon emissions strengthen, those moving down a natural gas pathway will be well positioned to benefit from fuel price stability, predictability, and long-term risk mitigation.

There are some incredible success stories and case studies in the market today, which you will hear about in the coming days. You will gain visibility into the natural gas-powered HHP markets that continue to build momentum and will be highlights of future HHP Summits. In this more challenged market, leaders are emerging and trailblazers are beginning to set themselves apart from others in their industry. Despite the ongoing stress test, it is an exciting time and one that is certain to lead to more aggressive conversion to natural gas in the coming years as the market conditions improve and end-users and suppliers continue to drive this growth.

To our sponsoring companies, we applaud your commitment to delivering more value and better performance to end-users through ongoing improvements to your engines, tanks, compressors, valves, and other technologies. Your leadership and foresight are critical as we strive to meet North America's energy security, economic development, air quality, and climate change mitigation goals. We would like to give a special thanks to our presenting sponsors—Caterpillar, Chart, and Pivotal LNG—for their ongoing support in ensuring this important annual conversation continues to take place.

See you on the show floor!



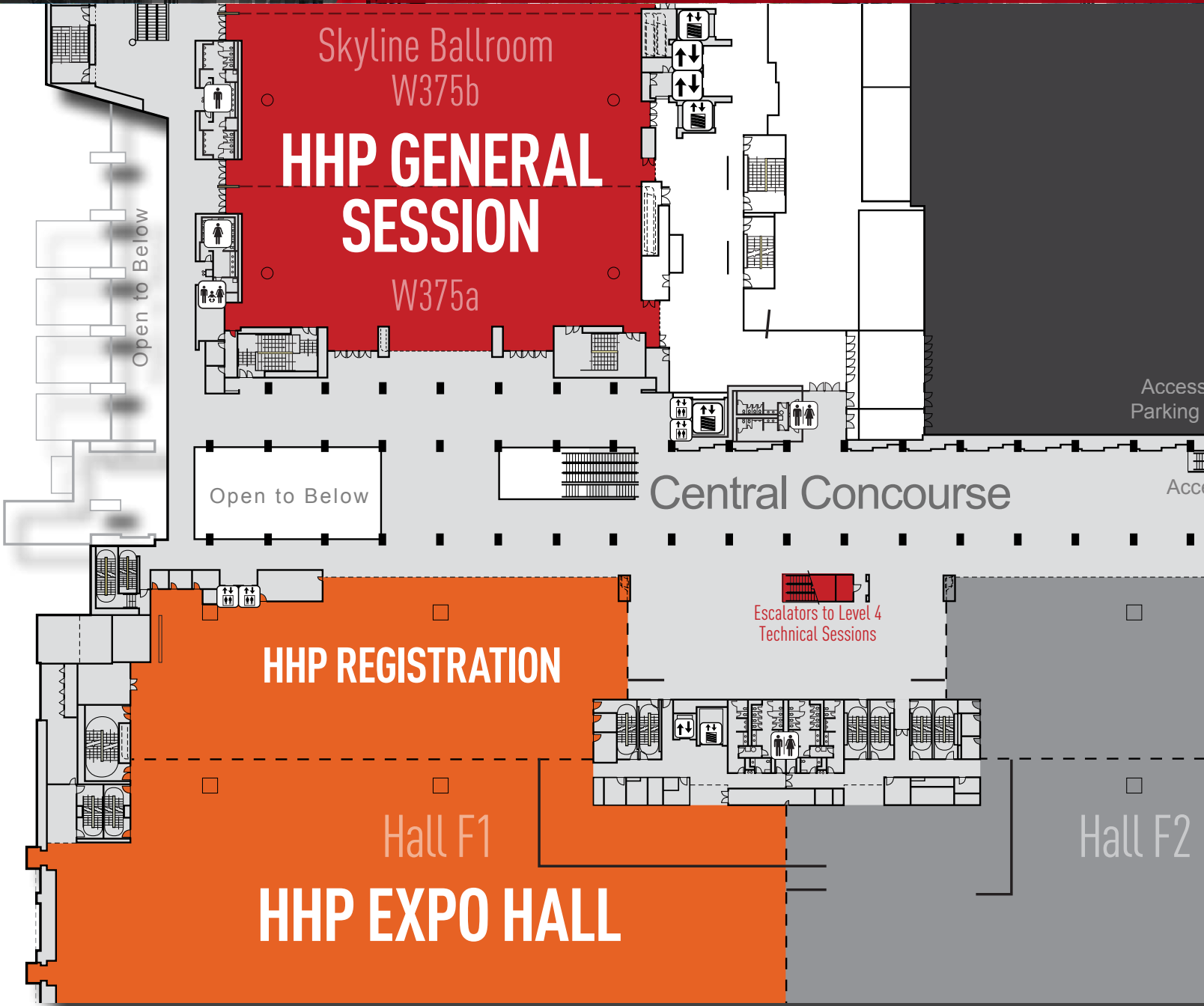
Erik Neandross  
Chief Executive Officer  
Gladstein, Neandross & Associates

**gna** GLADSTEIN,  
NEANDROSS  
& ASSOCIATES  
CLEAN TRANSPORTATION & ENERGY CONSULTANTS

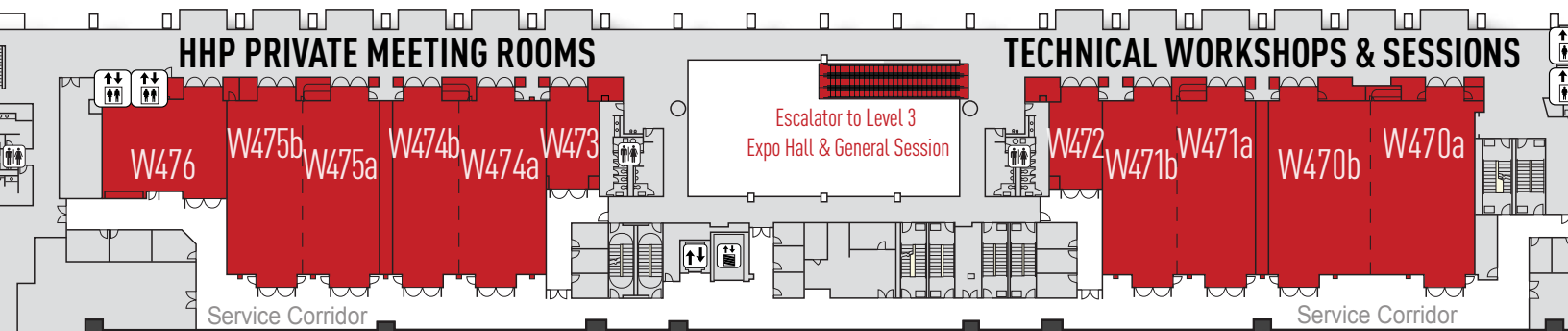




# McCormick Place West Map



## LEVEL 3



## LEVEL 4

# Keynote Speakers



**Andrew Evans**  
Chairman, President & CEO,  
Southern Company Gas  
(AGL Resources/Pivotal LNG)

Andrew Evans was named president of Southern Company Gas—the largest distributor of natural gas in America—in May 2015, and chief executive officer in January 2016. He serves as chairman of the Southern Company Gas Board of Directors and is a member of Southern Company's Management Council. Mr. Evans joined Southern Company Gas (AGL Resources) in May 2002 and has held several positions of leadership, including president and chief operating officer, executive vice president, chief financial officer, and treasurer. Mr. Evans came to Southern Company Gas from Mirant Corporation (formerly Southern Energy Inc.), where he served in various finance and business development roles over a nine-year period. Prior to Mirant, he was employed by National Economic Research Associates and the Federal Reserve Bank of Boston. He serves on the board of the American Gas Association (past finance chair). He also serves on the boards of Zoo Atlanta (chairman); Grady Memorial Hospital Corporation (audit chairman); Grady Health Foundation (chairman); New American Pathways; the Atlanta Committee for Progress; and the Georgia Council on Economic Education. Mr. Evans is a graduate of Emory University and the Booth/Kellogg program, CEO Perspectives.

Brian Cothran is president, North America Region for GE Oil & Gas. GE Oil & Gas is a leading digital industrial company inventing advanced technologies across all oil and gas segments in 120 countries worldwide. In this role, he leads all activities for GE Oil & Gas in the region. Mr. Cothran has more than 20 years of operations and leadership experience in the energy industry. He began his GE career in 1998 in GE Energy Installation and Field Services in Atlanta, Georgia, progressing through a number of roles in services, operations and sales. In 2008, he was appointed energy services general manager, Russia, CIS & Eastern Europe Region, where he was responsible for creating and developing GE Energy's service franchise across the region. In 2011, Mr. Cothran served as the Europe president for flow and process technologies, a business within GE Oil & Gas that designs and manufactures highly engineered safety relief valves, control valves and measurement, regulation, and control solutions. In 2013, Mr. Cothran was the managing director for the Royal Dutch Shell global account where he had strategic planning and operational responsibility for GE's entire range of products and services for the account. Mr. Cothran earned a Bachelor of Science in marketing from Berry College.



**Brian Cothran**  
President & CEO North  
America, GE Oil & Gas

# Featured Speakers



**Aaron Bridges**

Vice President of Sales and Marketing,  
Chart Energy & Chemicals



**Cameron Brown**

Vice President Engineering,  
Western Copper & Gold



**Shea DiMauro**

Director of Operations  
Support, BNSF Railway



**Eric Evans**

Vice President,  
Carnival Corporation



**Joel Feucht**

General Manager of Gas & Medium  
Speed Engines, Caterpillar



**Roger Garratt**

Director, Resource Acquisition,  
Puget Sound Energy



**John Grubic**

Team Lead - LNG Business  
Development Americas, Shell



**Steve Igoe**

Commercial Manager, LPSD Gas  
Engine Business Unit, Caterpillar



**Matthew Jackson**

Vice President LNG Business  
Development, Crowley



**Peter Keller**

Executive Vice President, TOTE



**Sean Lalani**

President, Eagle LNG Partners



**Corwin Nelson**

General Manager, Power Gen  
& Gas Compression Products,  
GE Distributed Power



**Stephen Nelson**

Chief Operating Officer,  
Longview Power



**Douglas Stout**

Vice President, Market Development  
& External Relations, FortisBC



**Sam Thomas**

Chairman of the Board &  
CEO, Chart Industries



**Chad Verret**

Executive Vice President Alaska & LNG  
Operations, Harvey Gulf International



# Expo Hall & Exhibitors

## FOOD RECEPTION LOUNGE

Hexagon Composites

231

Air Flow North America	Hitachi High-Tech AW Cryo
337	436

Algas-SDI International	MIRATECH
333	432

Info	RevLNG
329	428
Intertek Automotive Research	Sensor Electronics
327	426

Clarke Energy USA	Applied Cryo Technologies
437	536
Clean Energy Cryogenics	EKU Power Drivers
435	534
Acme Cryogenics	Karl Dungs
433	532

Ferus

427

GE

533

ABB - BU Turbocharging	FIBA Technologies
529	628
Galileo	
527	

CIMC ENRIC - Transworld Equipment

629

HIPOWER SYSTEMS

217

LightSail Energy

420

Cryogenic Industries

319

Caterpillar

419

Worthington Industries

521

Air Liquide Global E&C Solutions	Info
519	618

Quantum Fuel Systems Technologies

615

Info
312
Dixon Valve & Coupling
310
Gas Technology Institute
308
INOXCVA
306
ComAp
304
Perma Pipe
302

MSA - The Safety Company

315

Corban Energy Group

313

Parker Hannifin

413

Industrial Combustion

515

Matrix Service-Matrix NAC

513

PSB Industries
611
GP Strategies
609
Info
607
Stabilis Energy
605

Diesel & Gas Turbine Worldwide	Dresser-Rand
309	408

Chart Industries

405

Pivotal LNG

505

Southwest Research Institute

305

W&O Supply	Cryostar
301	400

Gladstein, Neandross & Associates

600

## ENTRANCE

## Expo Hall Schedule

<b>Tuesday, October 11</b>	4:00 p.m. - 6:00 p.m.	<b>Expo Hall Grand Opening Reception</b>
<b>Wednesday, October 12</b>	12:00 noon - 2:10 p.m. 4:00 p.m. - 6:00 p.m.	<b>Expo Hall Open &amp; Lunch</b> <b>Expo Hall Open &amp; Reception</b>

### Exhibitor

### Booth

ABB Inc. BU Turbocharging .....	529	GE .....	533
ACD .....	319	GP Strategies .....	609
ANGI Energy Systems .....	426	GTT North America .....	—
Acme Cryogenics .....	433	Galileo .....	527
Air Flow North America Corp .....	337	Gas Technology Institute .....	308
Air Liquide Global E&C Solutions .....	519	Gladstein, Neandross & Associates .....	600
Algas-SDI International .....	333	HIPOWER SYSTEMS .....	217
Applied Cryo Technologies .....	536	Hexagon Composites .....	231
CIMC ENRIC .....	629	Hitachi High-Tech AW Cryo, Inc. ....	436
CIMC - Transworld Equipment .....	629	INOXCVA .....	306
Caterpillar .....	419	Industrial Combustion .....	515
Center for Liquefied Natural Gas .....	—	Intertek Automotive Research .....	327
Chart Industries .....	405	Karl Dungs, Inc. ....	532
Clarke Energy USA .....	437	Kato Engineering .....	—
Clean Energy Cryogenics .....	435	LightSail Energy .....	420
ComAp .....	304	MIRATECH .....	432
Corban Energy Group .....	313	MSA- The Safety Company .....	315
Cosmodyne .....	319	Matrix Service-Matrix NAC .....	513
Cryogenic Industries .....	319	PSB Industries .....	611
Cryoquip .....	319	Parker Hannifin .....	413
Cryostar .....	400	Perma Pipe .....	302
Cummins .....	—	Pivotal LNG .....	505
Diesel & Gas Turbine Worldwide .....	309	Quantum Fuel Systems Technologies .....	615
Dixon Valve & Coupling Company .....	310	Rev LNG .....	428
Dresser-Rand .....	408	Shell LNG .....	—
EKU Power Drives Inc .....	534	Southwest Research Institute .....	305
Emerson Industrial Automation .....	—	Stabilis Energy .....	605
FIBA Technologies .....	628	W&O Supply, Inc. ....	301
Ferus .....	427	Wartsila .....	—
FortisBC .....	—	Worthington Industries .....	521



# Equipment Displays



Caterpillar G3520H Gas Engine Generator



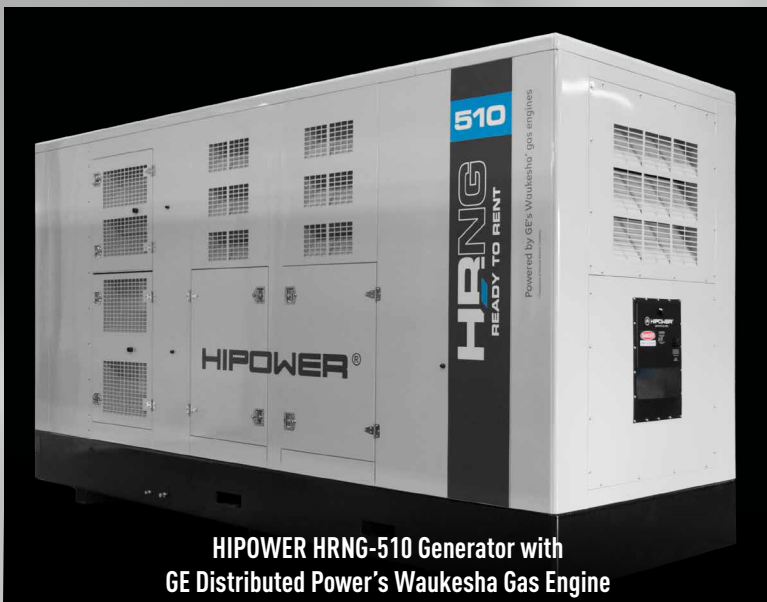
Transworld Equipment, Inc. - CIMC ISO Container



Hexagon Composites TITAN XL Trailer for Bulk Transportation of Natural Gas



GE Waukesha Gas Engine  
VGF H24SE with emPact Emission Control System



HIPOWER HRNG-510 Generator with  
GE Distributed Power's Waukesha Gas Engine



Quantum Fuel Systems' VP-650™ Virtual Pipeline Trailer for CNG Storage





# Agenda – Tuesday, October 11

## TECHNICAL WORKSHOP

## GENERAL SESSION

## TECHNICAL SESSION

## NETWORKING EVENT

1:00 p.m. - 4:00 p.m.

TECHNICAL WORKSHOP

### A Closer Look at Methane 2.0: Best Practices to Design, Develop, and Implement Projects That Achieve Positive GHG Benefits

*Additional Registration Required*

- Learn how natural gas-powered HHP projects—when designed, developed and implemented with both operational and environmental performance in mind—can deliver tremendous GHG emission benefits and economic returns
- Hear from leading experts on industry best practices on methane management to ensure optimal environmental performance, from picking the right engine technology to ensuring that fuel supply logistics and infrastructure are non-venting
- Understand how carbon pricing is driving investment in LNG power across the HHP sector, particularly in Canada
- Learn about a number of leading industry participants' efforts to supply lower carbon LNG to the HHP market via innovative LNG production plants powered by renewable energy and the use of renewable natural gas (RNG) sources
- Review recent research and papers published on these issues, and understand key findings and the reasons behind them
- Focus on key action items, technologies, and issues that require attention to meet the industry's environmental goals
- Understand current industry activities to identify sources of methane emissions in the HHP segment
  - Get an overview on some of the basic terms and issues:
    - What does "well to wheels" mean and how do I apply this to my project?
    - What is methane slip and how to calculate it?
    - What is GWP and which one do we use?

#### 1:00-2:25 – Background and Overview

MODERATOR: **Cliff Gladstein**, President, Gladstein, Neandross & Associates

**Patrick Couch**, Vice President, Technical Services, Gladstein, Neandross & Associates

**David Lyon**, Scientist, Environmental Defense Fund

**Shawn Murphy**, Distribution Engineering Manager, LNG Market Access Americas, Shell

**Les Gingell**, Vice President, Marine Sales, MAN Diesel

#### 2:25-2:35 – Break

#### 2:35-4:00 – Best Practices from Well to Wheels

MODERATOR: **Brian Powers**, Vice President LNG Production, Clean Fuels Corp.\*

**Paul Evans**, Executive Vice President, Ferus Natural Gas Fuels

**Johannes Escudero**, Chief Executive Officer and Executive Director, Coalition for Renewable Natural Gas

**William Epling**, Professor of Chemical Engineering, University of Virginia

**Lyle Jensen**, President and Chief Executive Officer, American Power Group, Inc.

1:00 p.m. - 4:00 p.m.

TECHNICAL WORKSHOP

### Training for Success: Comprehensive Training Programs for Successful Deployment in the HHP Sector

*Additional Registration Required*

- Get an overview of the progressive and comprehensive training programs being implemented to ensure personnel safety and achieve operational success and maximum project results
- Gain insight into training programs already implemented by leading HHP end-users in the rail and marine sector
- Understand the critical elements of an effective training program including timelines, costs, and other requirements
- Learn about the leading players and partners available to assist with training program development and implementation, including regulatory agencies and public and private sector organizations
- See a live LNG demonstration on the physical properties and characteristics of LNG, proper handling, and safety considerations

#### 1:00-2:05 – Case Studies

MODERATOR: **Sean Turner**, Chief Operating Officer, Gladstein, Neandross & Associates

**Dan Britton**, President, Pentex Alaska Natural Gas Company

**Michael Cleveland**, Manager of LNG Technology, BNSF Railway

**Richard Rogers**, Managing Director Storage & Peaking, Southern Company Gas (AGL Resources)

#### 2:05-2:15 – Break

#### 2:15-2:35 – LNG 101: A Live Demonstration

**Richard Rogers**, Managing Director Storage & Peaking, Southern Company Gas (AGL Resources)

#### 2:35-4:00 – Training Services & Opportunities

MODERATOR: **Margaret Doyle**, Senior Manager, Marine Business Development, Eagle LNG

**Bob Miller**, Training Manager, Wärtsilä North America

**Kirk Richardson**, Training Director, Emergency Services Training Institute, Texas A&M School of Fire Fighting

**Rod Rinholm**, Executive Director, Business Development and Education, Gas Technology Institute

4:00 p.m. - 6:00 p.m.

### Expo Hall Grand Opening Reception

Relax and unwind with a cocktail and appetizers as you explore the largest show floor in the industry. Get hands-on access to the latest natural gas engines, tanks, nozzles, valves, control systems, regasification units, ISO containers, and more.



# POWERING A NATURAL GAS FUTURE



## THE MOVE TO NATURAL GAS

Lower Operating Costs, Proven Performance

Caterpillar natural gas-powered engines

Mining • Petroleum • Rail • Marine • Electric Power • Solar Turbines

# Agenda – Wednesday, October 12

TECHNICAL WORKSHOP

GENERAL SESSION

TECHNICAL SESSION

NETWORKING EVENT

9:00 a.m. - 9:20 a.m.

GENERAL SESSION  
**Summit Welcome**



**Joel Feucht**, General Manager of Gas & Medium Speed Engines, Caterpillar Inc.  
**CATERPILLAR**

9:20 a.m. - 9:45 a.m.

GENERAL SESSION  
**Opening Address**



**Samuel Thomas**, Chairman, Chief Executive Officer, and President, Chart Industries  
**CHART**

9:45 a.m. - 11:15 a.m.

GENERAL SESSION  
**EXECUTIVE  
ROUNDTABLE |  
North America's  
Leading Natural  
Gas HHP  
Investments**

- Hear about the latest LNG production facilities now coming on line to support the forward market
  - Understand which applications and areas are seeing strong opportunity and growth
  - Learn from market leaders that continue to drive new projects forward despite the recent low oil-price environment
- MODERATOR: **Sam Thigpen**, President, Chart Lifecycle, Inc.  
**Roger Garratt**, Director, Resource Acquisition, Puget Sound Energy  
**Douglas Stout**, Vice President Market Development & External Relations, Fortis BC  
**Matthew Jackson**, Vice President LNG Business Development, Crowley  
**Sean Lalani**, President, Eagle LNG Partners

11:15 a.m. - 11:45 a.m.

GENERAL SESSION  
**Keynote Address**



**Andrew Evans**, President & CEO, Southern Company Gas (AGL Resources/Pivotal LNG)  
**Southern Company Gas**

12:00 noon - 2:10 p.m.

**Luncheon in the  
Expo Hall**

2:10 p.m. - 2:30 p.m.

GENERAL SESSION  
**Afternoon Address**



**Eric Evans**, Vice President, Carnival Corporation  
**Carnival**

2:30 p.m. - 3:30 p.m.

GENERAL SESSION  
**EXECUTIVE  
ROUNDTABLE |  
Critical Path  
Issues: Preparing  
for Market Growth**

- Hear from leading industry executives on areas of opportunity and growth in today's market
  - Learn how the industry is addressing remaining critical path issues – codes, safety standards, permitting process, fuel specifications, training, and others – in order to prepare for continued growth, particularly when higher oil costs return
  - Understand how ongoing environmental regulations, carbon programs, and sustainability initiatives will continue to drive investments in natural gas technologies across the marine, rail, mining, E&P, and off-pipeline industrial sectors
- MODERATOR: **Erik Neandross**, Chief Executive Officer, Gladstein, Neandross & Associates  
**Corwin Nelson**, General Manager, Power Gen & Gas Compression Products, GE Distributed Power  
**Aaron Bridges**, Vice President of Sales and Marketing, Chart Energy & Chemicals  
**Peter Keller**, Executive Vice President, TOTE & Chairman, SEA/LNG  
**John Grubic**, Team Lead – LNG Business Development Americas, Shell

3:30 p.m. - 4:00 p.m.

GENERAL SESSION  
**Keynote Address**



**Brian Cothran**, President and Chief Executive Officer, North America, GE Oil & Gas  
**GE**

4:00 p.m. - 6:00 p.m.

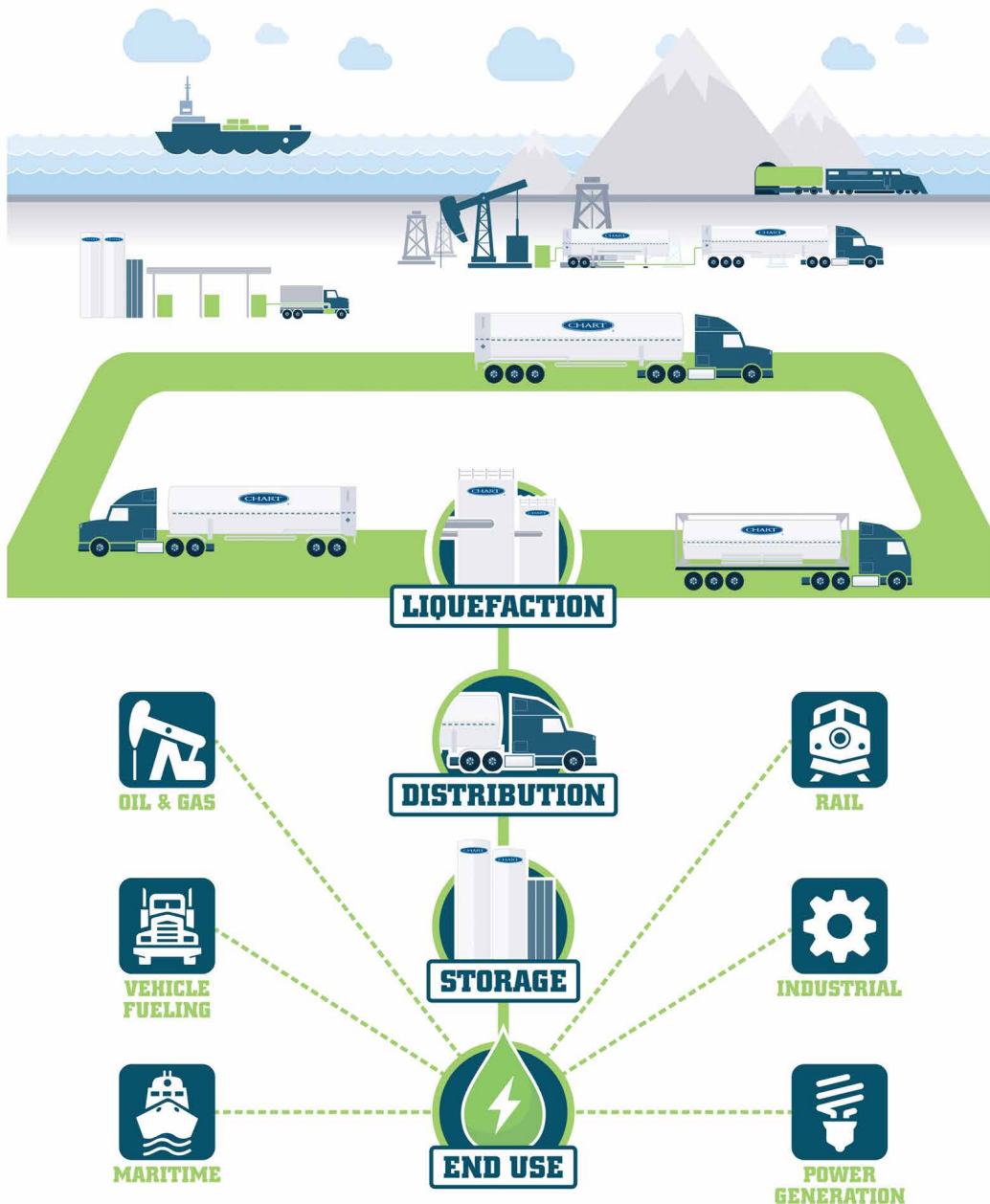
**Networking  
Reception in the  
Expo Hall**

The evening reception provides the perfect setting to connect with other end-users and industry stakeholders and make the contacts you need to successfully deploy your natural gas project. Enjoy a cocktail and appetizers as you debrief on the exciting projects and trends you learned about during day one.





# LNG VALUE CHAIN



# Agenda – Thursday, October 13

TECHNICAL WORKSHOP

GENERAL SESSION

TECHNICAL SESSION

NETWORKING EVENT

## 9:00 a.m. - Technical Session #1

9:00 a.m. - 10:30 a.m.

TECHNICAL SESSION 1.1

### Power Beyond the Pipeline: Innovative Natural Gas Solutions for Power Generation and Utility Applications



- Case studies that demonstrate how natural gas continues to be one of the most economically and environmentally effective means of generating power in remote geographies
- Innovative supply chain solutions that are being developed and implemented from the northern Yukon territories to the Caribbean to support projects well beyond the reach of a natural gas pipeline
- Insight from end-users on the challenges, benefits, and considerations associated with the development of an off-pipeline natural gas remote power generation project

MODERATOR: **Jim Reddinger**, Chief Operating Officer & Chief Financial Officer, Stabilis Energy

**Stephen Nelson**, Chief Operating Officer, Longview Power

**Scott Conway**, Engineering Supervisor, Caterpillar Global Power Solutions Division

**Dan Britton**, President, Pentex Alaska Natural Gas Company

**Dimitri Karastamatis**, General Manager, Mobile Energy Solutions, Inc. CenterPoint Energy

9:00 a.m. - 10:30 a.m.

TECHNICAL SESSION 1.2

### A Lot On Your Plate: How E&P Operations Can Meet EPA Tier 4 Final Regulations, Reduce Costs, and Remain Profitable in a Tight Market



- The impact of and compliance options for increasingly stringent US EPA Tier 4F emission regulations, from choosing the right engine to maximizing the use of field gas and flare gas
- Why fuel suppliers are no longer providing natural gas to customer well pads, but are instead delivering electrons to customers via a comprehensive and integrated solutions approach
- Case studies on how E&P companies are staying profitable in a difficult economic environment through innovative natural gas power strategies
- The latest advancements in natural gas-powered technology, considerations for maximum diesel displacement, and strategies to decrease fuel costs in daily operations

MODERATOR: **Steve Stump**, Vice President of Business Development, Stabilis Energy

**Diana Hopkins**, Land Drilling Marketing Manager, Caterpillar

**Stewart Wilson**, Vice President, CNG, Ferus Natural Gas Fuels

**Jason Gore**, Manager, Off Highway Engineering, Cummins

**Steve Childers**, Senior Vice President, Southern Pump and Tank Company

9:00 a.m. - 10:30 a.m.

TECHNICAL SESSION 1.3

### Full Steam Ahead: One Year of LNG Operations and Dozens of Ships Set to Soon Sail



- Case studies on in-use LNG vessels from some of the industry's most progressive leaders
- Key lessons learned during the last full year of LNG marine operations
- More than two dozen LNG-powered vessels already under contract for deployment and confirmed natural gas operations in North America
- Where the forward market for LNG marine operations is headed and where the 'hot spots' for market growth will be in the next few years

MODERATOR: **Arvind Ramakrishnan**, Manager, Natural Gas Technology Solutions, FortisBC\*

**Chad Verret**, Executive Vice President Alaska & LNG Operations, Harvey Gulf

**Peter Keller**, Executive Vice President, TOTE & Chairman SEA/LNG

**Bill Amundsen**, Account Manager, Wartsila North America, Inc.

**Leif Gross**, Product Definition and New Product Introduction Manager, Caterpillar Marine Power Systems

9:00 a.m. - 10:30 a.m.

TECHNICAL SESSION 1.4

### All Aboard: Natural Gas Locomotive Projects Gain Steam as Additional Gas-Powered Units Hit the Tracks



- Case studies from Class I and short-line railroads showcasing their continued investment in demonstrating, testing, and deploying natural gas locomotives and infrastructure, including both LNG and CNG
- A look at the latest advances in natural gas locomotive technology

MODERATOR: **Dave Meyers**, Business Development Manager, North America, Hexagon Composites\*

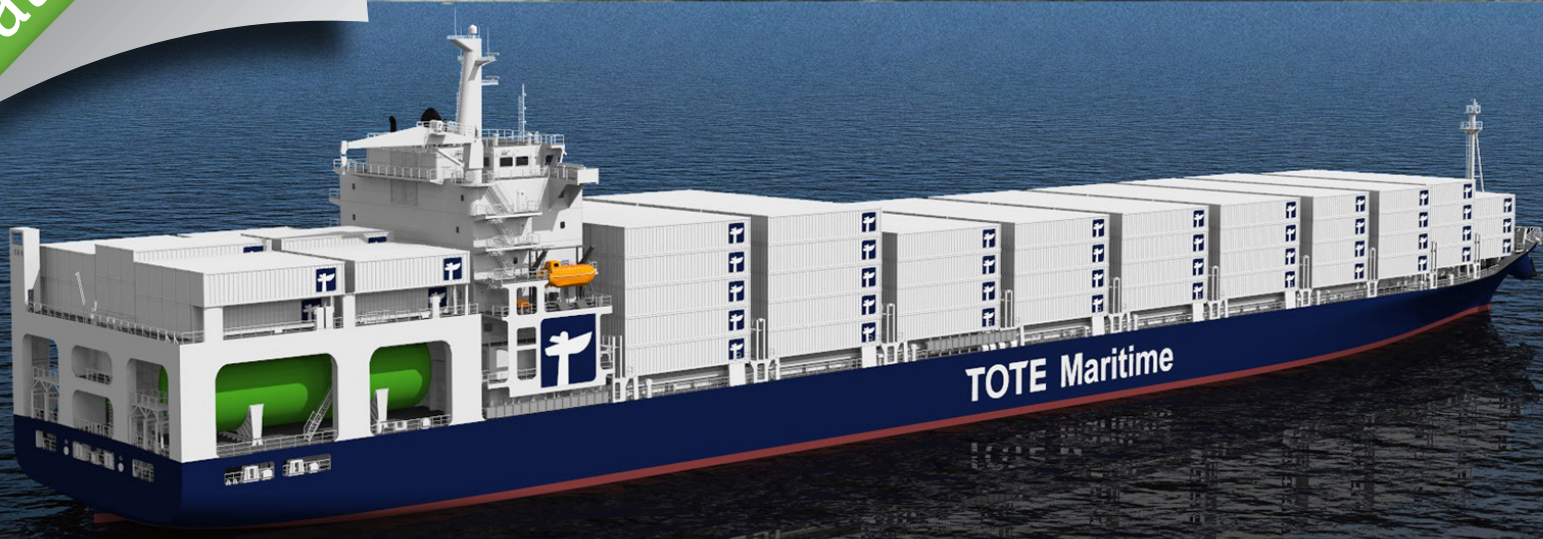
**Shea DiMauro**, Director of Operations Support, BNSF

**Greg Rozitis**, Vice President Business Development LNG Solutions, Hitachi High-Tech AW Cryo, Inc.

**Ed Cryer**, Manager, High Volume Design and Manufacturing, Electro-Motive Diesel

**Graciela Trillanes**, LNG Product Leader Locomotive, GE Transportation

Visit us  
at booth 505



# FIRM SUPPLY. FLEXIBLE SOLUTIONS.

Pivotal LNG provides its customers with firm LNG supply 24 hours a day, 365 days a year. Contact us to design a fueling solution that meets your needs.



[pivotallng.com](http://pivotallng.com) | 713.300.5116 | [info@pivotallng.com](mailto:info@pivotallng.com)



# Agenda – Thursday, October 13 (cont'd)

TECHNICAL WORKSHOP

GENERAL SESSION

TECHNICAL SESSION

NETWORKING EVENT

## 11:00 a.m. - Technical Session #2

11:00 a.m. - 12:30 p.m.

TECHNICAL SESSION 2.1

### Virtual Pipelines: Delivering Efficient, Cost-Effective, and Low-Emission Energy Solutions



- Case studies demonstrating how innovative natural gas supply chains are delivering lower-cost and lower-emission energy solutions to customers beyond the reach of traditional gas pipeline and electrical utilities
- Challenges and opportunities associated with using a “virtual pipeline” to bring natural gas supply to regions where traditional pipeline infrastructure does not exist
- Innovative fuel transport methods, including ISO containers, tube trailers, and rail cars, and key decision points when choosing a fuel provider and fuel delivery method
- Logistics and management considerations when implementing natural gas into daily operations

MODERATOR: **William Wells**, Director of HHP and Utility Markets, Eagle LNG Partners

**Stephen Sheridan**, Senior Manager (I), Pacific Gas & Electric Company

**Pierre Fiat**, Chief Executive Officer, Air Flow North America Corp.

**Paul Cheliak**, Director, Innovation and New Markets, Canadian Gas Association

**George Chedsey**, Vice President of Business Development, GTUIT

11:00 a.m. - 12:30 p.m.

TECHNICAL SESSION 2.2

### Another Day at the Mine: Driving Innovation, Cost Reductions, and Environmental Performance Improvement



- Case studies demonstrating how natural gas is being used to deliver the power needed to run a modern mine
- Insight into key considerations for mining companies evaluating natural gas, from greenfield development projects to the conversion of existing diesel-based operations
- How natural gas solutions can provide the most cost-effective and efficient pathway to meeting the regulations impacting a modern mining operation, both today and into the future
- Key supply chain fueling and infrastructure considerations

MODERATOR: **Marc Megel**, Director of Design & Development, Southwest Research Institute

**Steve Igoe**, Commercial Manager, LPSD Gas Engine Business Unit, Caterpillar

**Cameron Brown**, Vice President Engineering, Western Copper & Gold

**Brendan Marshall**, Senior Director, Economic and Northern Affairs, Canadian Mining Association

**Kirt Montague**, Chief Executive Officer, Plum Energy

11:00 a.m. - 12:30 p.m.

TECHNICAL SESSION 2.3

### Supply Chain and Technical Considerations for LNG Marine Bunkering



- Insight on innovative solutions for LNG bunkering—multiple ISO containers, purpose-built barges, direct shore-to-ship operations, and more
- Key sizing considerations and tank configurations for optimal LNG bunker barge design and operations

MODERATOR: **Gregory Denton**, Business Development Manager, GTT North America

**Robert Butts**, Manager, Fuels, Pivotal LNG

**William Hutchins**, Marine Project Engineer, Shell

**Mark Grist**, Senior Manager, Business Development, FortisBC

**Margaret Doyle**, Senior Manager, Marine Business Development, Eagle LNG

11:00 a.m. - 12:30 p.m.

TECHNICAL SESSION 2.4

### Critical Path Issues for the Growth of the Natural Gas Rail Sector



- Critical path issues and next steps on FRA/AAR efforts to finalize standards for natural gas tender cars
- Key considerations for infrastructure development, including a look at synergies with other regional transportation hubs
- Current and next-generation engine technology for natural gas operations

MODERATOR: **Erik Neandross**, Chief Executive Officer, Gladstein, Neandross & Associates

**Phani Raj**, General Engineer, Federal Railroad Administration

**Dave Cackovic**, Assistant Vice President and Chief Technical Standards, Transportation Technology Center, Association of American Railroads Tender Technical Advisory Group (AAR TAG)







**Miguel Raimao**, Principal, Lead Strategist, Resonance Mode, Inc.

**Scott Nason**, Product Manager, Rail Cars, Chart Industries

**CLEAN TRANSPORTATION  
& ENERGY CONSULTANTS**



**Providing a full suite of services to manage  
your natural gas project from start to ROI.**

-  **FLEET & EQUIPMENT PLANNING**
-  **GRANTS & FUNDING**
-  **FUELING & INFRASTRUCTURE**
-  **GOVERNMENT & PUBLIC AFFAIRS**
-  **EVENTS & MARKETING**
-  **MARKET ANALYSIS & DEVELOPMENT**

Organizers of



[www.hhpsummit.com](http://www.hhpsummit.com)



[www.actexpo.com](http://www.actexpo.com)



[www.rethinkmethane.org](http://www.rethinkmethane.org)

# Agenda – Thursday, October 13 (cont'd)

TECHNICAL WORKSHOP

GENERAL SESSION

TECHNICAL SESSION

NETWORKING EVENT

1:00 p.m. - 3:00 p.m.

TECHNICAL WORKSHOP

## Exploring Tier 4F: Compliance and Technology Considerations for Drilling and Frac Operations



Presented by

**CATERPILLAR**



**Additional  
Registration  
Required**

Full implementation of US EPA's Tier 4 Final regulation is imminent. Although there is surprisingly very little awareness of this significant regulation, the impacts of this rule will be substantial. Some potential impacts to drilling and pressure pumping operations can include:

- Increased concerns about site noise
- Fuel savings via more efficient Tier 4 engines
- Larger equipment size and weight; thus impacts on rig moves and site layouts
- The application of additional emission reduction technologies required to meet Tier 4F standards
- Increased complexity for engine operations, maintenance, and/or emission control equipment, fuels and fluids
- Customer preference for Tier 4F engines over Tier 2 engines and the impact on this installed Tier 2 asset base in the marketplace
- Opportunities for activist groups to target companies continuing to use Tier 2 engines
- New considerations for dual-fuel engine deployment
- Potential complications resulting from consistent low engine load
- New strategies required to optimize performance and therefore the total cost of ownership on Tier 4F engines

Attend this workshop to ensure your operation is prepared for this potential "cliff event." Hear from Cummins and Caterpillar and a number of other industry stakeholders and end-users on these important topics. This workshop will cover the basic parameters and timelines of the rule, and will provide operators with knowledge and information on:

- How to begin planning for and effectively manage all of the potential impacts noted above
- How all operators in the US and Canada will be required to purchase Tier 4F equipment beginning in approximately one year
- Common misconceptions around the continued use of Tier 2 engine technologies and how and when mandatory Tier 4F emissions retrofit requirements will impact existing equipment already operating in the field
- Where mandatory Tier 4F retrofit requirements are already being put into place via Sustainable Shale Development programs in the Marcellus, Bakken, and elsewhere
- The increased level of technology, after-treatment, and exhaust after-treatment fluids required to meet EPA Tier 4F emission standards
- The challenges and opportunities in managing noise, power, fuel efficiency, exhaust after-treatment, and fluids/fuel delivery and storage on the well pad
- The advantages, disadvantages, and overall Tier 4F compliance considerations for the various technology options in the marketplace, including dual-fuel, dedicated spark gas, retrofit, and others
- How natural gas power can provide a more effective and cost-efficient compliance solution
- How all partners in the supply chain—E&P companies, drilling contractors, pressure pumping operators, equipment suppliers, engine OEMs and others—can work more closely to optimize compliance solutions and minimize costs

**Matt Houser**, General Manager, Drilling Business, Cummins Sales and Service

**Rodney Harms**, Well Service Product Marketing Manager, Caterpillar

**Brian Breaux**, Technical Project Leader, Sales and Service Cummins

**Cole Walker**, Territory Sales Manager, Thunder Creek Equipment

**Speaker TBA**, Pilot Thomas





PRESENTING SPONSORS:



ORGANIZED BY:



CLEAN TRANSPORTATION & ENERGY CONSULTANTS

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](http://www.gladstein.org)